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ROYAL BOTANIC GARDENS, KEW

## VII.—RESEARCHES ON SILENE MARITIMA AND S. VULGARIS*: II..

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Naturally occurring Hybrids.

In the first paper of this series we described the results of artificially controlled self- and cross-pollinations of typical examples of the two species of *Silene* with which we are working. In this paper we record and describe naturally occurring hybrids which we have collected during intensive field studies in a limited number of localities. The conclusion that the plants to which special attention is called are of hybrid nature has been reached after a full study of all their characters made on living material. To enable the reader to criticize the soundness of our conclusions we also give descriptions of the probable parents when these were found near their supposed offspring. It seemed opportune to include descriptions of two hybrid plants found in the Herbaceous Ground at Kew. Specimens of all the plants described are preserved in the Genetical Herbarium at Kew.

In the descriptions which follow, the phrases "*maritima* type," "*vulgaris* type," and "$F_1$ type" refer to the descriptions and figures given in our first paper of the plant organs concerned. The plants there dealt with have proved to be excellent standards, reference to which saves much repetition.

### Chesil Beach, Dorset.

*Silene maritima* is very abundant on the landward slope along the greater part of the Beach, though its distribution is not continuous. Towards Portland we failed to find any trace of hybridization with *S. vulgaris*. At the other end of the beach near where the lane from Abbotsbury comes to the shore, however, we found clear evidence of crossing between the two species and search revealed the presence of *S. vulgaris* within a yard or two of the Beach, and only a short distance from the hybrid plants. The following descriptions will suffice to indicate the characters of the hybrids. They occurred on the margin of the shingle.

*Hybrid, Stock Plant* 34. Stems up to 9 dm. long, anthocyanin in stem and calyx. Leaves elliptic-lanceolate, 3·4 cm. long, 1 cm. broad, acute, somewhat dark green. Flowers up to 6 in number, hermaphrodite. Petals and lobes contiguous to slightly overlapping,

*Continued from *K.B.* 1928, No. 1, p. 17.

scale of $F_1$ type, petals 1·6 cm. long, 9 mm. broad, no anthocyanin blotch, blade lobed to two-thirds its length. Stigmata white. Immature seeds pink.* Capsule of $F_1$ type ; carpophore 3·5 mm. long, 2 mm. broad. Mature seeds tubercled. The plant was suffering from *Marssonina*. The diameter of the root one inch below the surface was 3·8 cm.

*Hybrid, No.* 22. Stems 6 dm. long, anthocyanin in stem and calyx. Leaves elliptic-lanceolate, 3·6 cm. long, 9 mm. broad, acute, dark green. Flowers 5 to 16 in number, female. Petals and lobes not overlapping, scale of $F_1$ type, petals 1·4 cm. long, 3·5 mm. broad, blade lobed to two-thirds its length. Stigmata white. Immature seeds pink. Capsule of $F_1$ type ; carpophore 2 mm. long, 2 mm. broad. Mature seeds tubercled. The plant was attacked by *Marssonina*.

Another hybrid was growing near this last one. It was hermaphrodite, had pink stigmata, pink immature seeds, and armadillo mature seeds.

Numerous plants of *Silene maritima* grew around these hybrids, especially on the seaward side of them. Most of the combinations of characters occurring in *S. maritima* were found in plants growing on the Chesil Beach at the Abbotsbury end and will be dealt with in our next paper. It was impossible to pick out any individuals as the parents of the hybrids. It was, however, different with the second parent, *S. vulgaris*, for after a very thorough search we found only one plant in the immediate neighbourhood. This was growing in grass at the corner of Abbotsbury Lane a few yards from the edge of the shingle and not far from the two hybrids last described. Its characters indicate that it was very probably one of the parents of these and we have therefore prepared the following description of it.

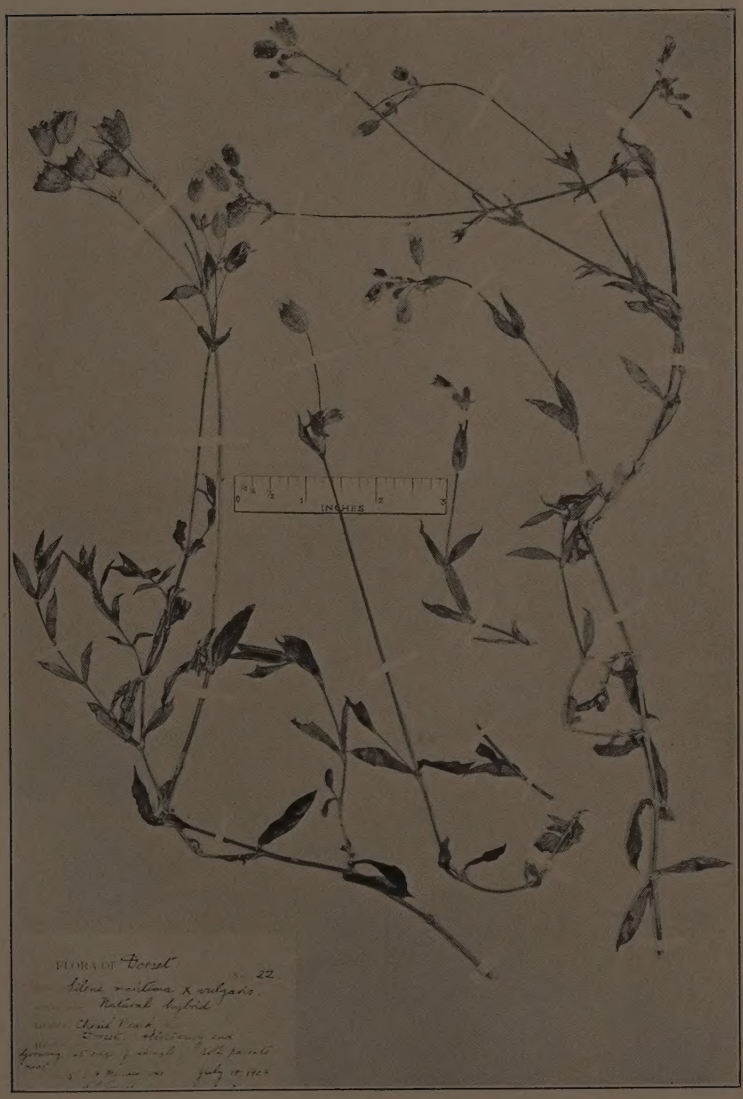
*S. vulgaris*. Stems glabrous, ascending then erect, 6·5 dm. high ; with no barren shoots. Leaves broadly lanceolate to elliptic-lanceolate, apex acute, apiculate, lower narrowed to the base, upper with subcordate to amplexicaul base, average of fully developed leaves 6 cm. long, 2·2 cm. broad, margins ciliate ; texture thinner and more flaccid than in *S. maritima*, colour distinctly green. Inflorescence with up to 7 flowers, which are more or less drooping when in bloom ; bracts at first green-herbaceous, many becoming scarious later. Flowers female and hermaphrodite. Calyx ovoid, contracted at the apex, 1·5 cm. long, 1 cm. diam. ; teeth equilaterally triangular, acute, apiculate. Petals with the blade lobed for two-thirds its length, 1·2 cm. long, 4·5 mm. broad, with the merest trace of a boss. Stigmata white. No mature capsules or seeds.

**Hurst Castle, Hants.**

Another well-known shingle beach of the south of England is that which runs parallel to the main trend of the coast from Milford

* "Pale Laelia pink," Ridgeway pl. xxxviii. 67 VR. f.

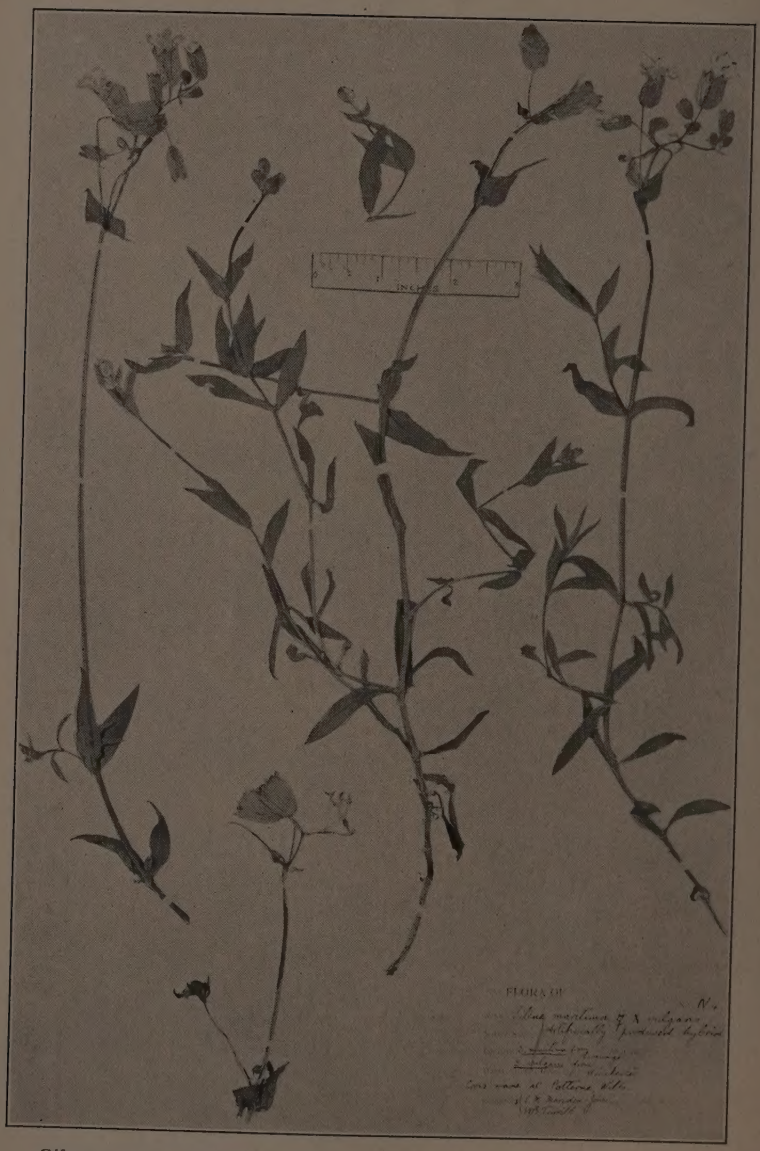
PLATE I




*Silene maritima X S. vulgaris.* Natural hybrid growing at the Abbotsbury end of the Chesil Beach, at the edge of the shingle with both parents near, July 18th, 1928.

[*To face page* 34.

PLATE II



*Silene maritima* X *S. vulgaris*. Artificially produced hybrid from a cross made at Potterne, Wilts; specimen collected June 14th, 1926.

*To face page* 35.]

to Hurst Castle in Hampshire. From near Keyhaven to the farthest curved spit plants of *S. maritima* occur on the slope towards the marshes. The distribution is somewhat patchy. They occur near Keyhaven on the bank off the beach and against the road bounding the marshes. A considerable number of plants have been found near the middle of the beach and they are particularly abundant at the farthest end on all sides of the Castle. On the protected side of the Castle against the marshes the shingle has become stabilised and covered with a thick, often lush, turf of grasses and other plants. In this area we found a large plant of *S. vulgaris* with *S. maritima* growing near. Between the two parent species plants of obviously hybrid origin were growing. Other plants in the immediate neighbourhood also showed signs of hybridization. Since the *S. vulgaris* plant had certainly been established for several years at least there was time for $F_2$ individuals and back-crosses to have been produced. We doubt, however, if the general shingle population of *S. maritima* will be affected, since our experience is that neither *S. vulgaris* nor the hybrids can survive extreme shingle conditions.

*Hybrid* 1927. Stems up to 3 dm. long. Leaves narrow lanceolate- or oblanceolate-oblong, 2·5 cm. long, 7 mm. broad. Flowers 1 to 3 in number. Hermaphrodite and female. Calyx of $F_1$ type. Petals with contiguous lobes, 1·8 cm. long, 6 mm. broad, with blade lobed three-quarters the length, scale of $F_1$ type. Stigmata white. Capsule of $F_1$ type but verging towards *maritima* ; carpophore 2 mm. long, 2 mm. broad. Seeds weak armadillo.

*Hybrid* 1928. Stems up to 3 dm. long. Leaves linear or lanceolate-linear, acute, average of well developed leaves 2·2 cm. long, 4 mm. broad. Flowers 1 to 3 in number. Calyx of $F_1$ type. Petals and segments not contiguous, 1·6 cm. long, 8 mm. broad, with blade lobed three-quarters the length, scale of $F_1$ type. Capsule of *maritima* type with reflexed teeth. Mature seeds tuberculed.

The following two plants, growing near the last, may have been the immediate or original ancestors of the last described hybrid. The *S. vulgaris* plant was probably the parent of both the above hybrids.

*S. vulgaris*. Stems up to 6 dm. long. Leaves elliptic-lanceolate, average of well-developed leaves 4 cm. long, 1 cm. broad. Flowers 6 to 12 in number, female. Calyx of the *vulgaris* type. Petals with segments overlapping, divided for two-thirds their length, 1.2 cm. long, 5 mm. broad, scale very small, little more than a boss. Stigmata white. Capsule of the *vulgaris* type but the teeth slightly spreading ; carpophore 3 mm. long, 2 mm. broad.

*S. maritima*. Stems up to 3 dm. long. Leaves linear-lanceolate, acute, average of the well-developed leaves 2·8 cm. long, 5 mm. broad. Flowers 1 to 3 in number. Calyx of the *maritima* type. Petals overlapping, with the blade divided two-thirds its length, segments not overlapping, 1·9 cm. long, 1 cm. broad, scales well developed.

Stigmata white. Capsule of the *maritima* type; carpophore 4 mm. long, 2·5 mm. broad. Seeds armadillo.

**Little Orme, North Wales.**

In July, 1921, natural seed was collected from a plant of *S. vulgaris*, growing on the Little Orme, North Wales. On being sown at Potterne it produced plants which were obviously of hybrid origin, in addition to plants similar to the seed parent with *vulgaris* type of capsule and tubercled mature seeds. The following is a description of one of the hybrids.

Stems up to 3·6 dm. long. Leaves elliptic-lanceolate or oblong-lanceolate, acute, 3·7 cm. long, 8 mm. broad. Flowers up to 12 in number, hermaphrodite. Calyx of the $F_1$ type. Petals with the segments not overlapping, with the blade divided for three-quarters its length, scale of the $F_1$ type, 1·8 cm. long, 7 mm. broad. Capsule of $F_1$ type. Mature seeds tubercled.

**South Devon.**

At Dunmore, near Shaldon, South Devon, a plant of *S. vulgaris* and a hybrid growing 4 feet 8 inches from it were found on the roadside, about 220 yards from the coast, on the 15th of September, 1928. The following descriptions are of the *S. vulgaris* parent and of the hybrid.

*S. vulgaris*. Plant glabrous. Stems up to 7·5 dm. long. Leaves lanceolate or narrow-lanceolate, acute and apiculate, 5·4 cm. long, 1·3 cm. broad. Fruits up to 20 in number. Calyx of the *vulgaris* type, carpophore 2 mm. long, 1·5 mm. broad. Mature seeds tubercled. Plant without flowers when found.

*Hybrid*. Plant glabrous. Stems up to 5·5 dm. long. Leaves varying in shape from lanceolate to oblong-lanceolate, acute and apiculate, 4·7 cm. long and 1 cm. broad to 1·5 cm. long and 5 mm. broad. Flowers 2 to 7 in number, female. Calyx of $F_1$ type. Petals with blades lobed to two-thirds their length, 1·4 cm. long, 4 mm. broad, petals and segments not overlapping, with a boss only. Stigmata tinged pink. Immature seeds pink. Capsule of the *maritima* type; carpophore 2 mm. long, 2 mm. broad. Mature seeds tubercled.

On Lea Mount, Dawlish, South Devon, there is a not very large colony of plants which are predominantly *S. maritima*. The majority grow in the turf on Old Red Sandstone, but a small number occur on the actual face of the cliff to a height of about 50 feet. Most of the plants have rather large, narrowly oblanceolate leaves, and it would appear from the characters of the scales and capsules that some of them are hybrids. At the top of the cliff two plants of *S. vulgaris* were found, and an undoubted hybrid was growing practically with one of them. A *S. vulgaris* and a typical *S. maritima* plant from this locality and two hybrids are described below.

*S. vulgaris No.* 8. Plant glabrous. Stems up to 6 dm. high. Leaves narrowly lanceolate-oblong, acute, apiculate, 5·6 cm. long,

1·4 cm. broad. Calyx of the *vulgaris* type. Capsule of the *vulgaris* type; carpophore 2 mm. long, 1·5 mm. broad. Mature seeds tubercled. No flowers.

*S. maritima No.* 6. Plant glabrous. Stems up to 4 dm. long, prostrate. Leaves oblanceolate, acute, 2·2 cm. long, 6 mm. broad. Calyx of *maritima* type. Sex hermaphrodite. Petals slightly overlapping, lobes not overlapping, 2·3 cm. long, 1 cm. broad, good scale. Stigmata white. Immature seeds pink. Capsule of *maritima* type; carpophore 4 mm. long, 3 mm. broad. Mature seeds tubercled.

*Hybrid No.* 9. Growing with *S. vulgaris No.* 8. Numerous plants of *S. maritima* around and below. Stems up to 6 dm. high. Leaves lanceolate- to oblanceolate-oblong, acute, apiculate, 4·4 cm. long, 1·1 cm. broad. Calyx of $F_1$ type. Capsule of $F_1$ type; carpophore 3 mm. long, 2 mm. broad. Mature seeds tubercled. No flowers.

*Hybrid Stock Plant* 48, at foot of Lea Mount. Growing with numerous plants of *S. maritima* and probable hybrid segregates around, and *S. vulgaris* No. 8 at the top of the cliff. Plant glabrous. Stems up to 9 dm. long, trailing. Leaves elliptic-oblong to oblanceolate, pinched apiculate, 3 cm. long, 1·1 cm. broad. Calyx of $F_1$ type. Sex hermaphrodite and female. Petals and lobes not overlapping, petals 1·5 cm. long, 4·5 cm. broad, boss only, no trace of scale. Capsule of $F_1$ type; carpophore 3 mm. long, 2 mm. broad. Mature seeds tubercled.

**Descriptions of two hybrid plants cultivated in the Herbaceous Department, Royal Botanic Gardens, Kew, 25.6.28.**

I. Cultivated as *Silene maritima*.

Stems 5 dm. long. Leaves linear- or narrowly elliptic-lanceolate, acute, 2 cm. long, 4 mm. broad. Calyx of $F_1$ type. Petals lobed to two-thirds the length of their blades, segments not overlapping, 1·5 cm. long, 5 mm. broad, scale of $F_1$ type, very small. Sex female. Stigmata white. Immature seeds pink. Capsule of $F_1$ type. Mature seeds tubercled.

II. Cultivated as *S. cucubalus*.

Stems 5 dm. long. Leaves lanceolate-oblong, acute, 3·1 cm. long, 6 mm. broad. Calyx of $F_1$ type. Petals with blades lobed two-thirds of their length, segments not overlapping, 2·1 cm. long, 8 mm. broad, scale of $F_1$ type. Sex hermaphrodite. Stigmata white. Immature seeds pink. Capsule of $F_1$ type; carpophore 3 mm. long, 1·5 mm. broad. Mature seeds weak tubercled.

The above plants are of special interest as additional illustrations of how readily the two species cross when brought into contact. Without doubt they were derived from parent plants of each species cultivated near together at Kew or in another botanic garden, and unintentionally crossed by the visits of insects.

**Summary and conclusions.**

Details of the occurrence and descriptions of naturally occurring hybrids between *Silene maritima* and *S. vulgaris* are given. These have now been found by us on the Chesil Beach, Dorset, Hurst Castle Shingle Beach, Hampshire, Dunmore and Dawlish, South Devon, and Little Orme, North Wales. Descriptions of probable parents found growing with some of the hybrids are also given.

It is known from our previously published work that considerable quantities of viable seed are obtainable when the two species are artificially crossed. Additional work, at present unpublished, has indicated that the fertility on crossing the species is often practically as high as that of intra-specific pollination and fertilization. Moreover, the range of variation within each species is as great, when all characters are considered, as the differences normally exhibited by the two species. There seems, in other words, no valid taxonomic or genetic reasons why the two species should not regularly interbreed and, indeed, amalgamate as one ' polymorphic ' species. And yet they have not done so, nor is there any indication that that will be their fate in the near future. Natural hybrids between them are relatively rare and only occur near the parents. Ecologically the two species are quite distinct. *S. maritima* occupies maritime habitats, especially shingle beaches and cliffs, or stony ground at considerable altitudes.* *S. vulgaris*, in this country, is an inland plant of grassy downs, arable land, roadsides, and broken ground. Hybrids occur only in the narrow zone where the species meet.

These, amongst other facts, have led us to conclude that the two species are ecologically separated and that physiological differences not obviously connected with their gross morphology keep them distinct. Suggestions as to the nature of these differences are reserved for a future paper.

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## VIII.—THE CORRECT SPELLING OF CERTAIN GENERIC NAMES: IV.† T. A. Sprague.

A supplementary list containing 55 additional generic names the spelling of which is in dispute has been prepared in response to enquiries from various sources. Investigation of the subject has led to the following conclusions, which it is hoped may be endorsed by the next International Botanical Congress. There seem to be two feasible methods of attaining uniformity in the spelling of generic names. The method here advocated is the strict application of the International Rules in each case, except where conservation of a later spelling (*e.g. Bougainvillea*) may seem desirable. An alternative is the establishment of an International list of all generic names with their accepted spellings.

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*We are not yet certain of the status of high-mountain plants generally referred to *S. maritima*.

†See *K.B.* 1928, pp. 113, 285, 337.

I. The original spelling of a generic name must be retained except in the case of a typographic error (*e.g. Fissenia* for *Kissenia* and *Ferdinandia* for *Fernandoa*) or of an *unintentional* orthographic error (*e.g. Hyeronima* and *Hieronima* for *Hieronyma*)—vide Internat. Rules, ed. 2, Art. 24, 50, 57.

*Note* 1. The words "original spelling" mean the spelling adopted when the name was *effectively* published (*e.g. Mesembryanthemum*, not *Mesembrianthemum*).

*Note* 2. Previous spellings should, however, be taken into consideration in certain cases (*e.g. Amaranthus*), in order to decide whether a philologically corrupt form or an erroneous spelling of a generic name, employed by the author who effectively published it, was adopted by him from a previous work, in which case the spelling is to be regarded as intentional, or had not been used previously, in which case the spelling *may* be due to an *unintentional* orthographic error.

II. In determining the original spelling of Linnean generic names, Sp. Pl. ed. 1 (1753) and Gen. Pl. ed. 5 (1754) are treated as if they had been published simultaneously. Where different spellings were adopted by Linné in these two works, the correct form should be determined by means of the following considerations.*

1. If Linné subsequently to 1753-54 consistently adopted one of the spellings, that spelling should be accepted as his choice, *e.g. Thuja* (not *Thuya*).

2. If not, the spelling which is more correct philologically should be accepted, *e.g. Agrostemma* (not *Agrostema*).

3. If the two spellings are equally correct philologically and there is a great preponderance of usage in favour of one of them, that should be accepted, *e.g. Rhododendron* (not *Rhododendrum*)—vide Art. 5.

4. If the two spellings are equally correct philologically, and there is no great preponderance of usage in favour of one of them, then the form that is in accordance (or more nearly in accordance) with the Recommendations should be accepted, *e.g. Ludwigia* (not *Ludvigia*), *Ortegia* (not *Ortega*).

The four papers of the present series embody the results of an investigation into the orthography of 181 generic names. It has repeatedly been found in the course of this enquiry that two or more authors, who assumed the right of "correcting" the spelling of a particular generic name, have "corrected" it in two or more different ways, good examples being *Buddleja*, *Cypripedium*, *Furcraea*, *Pereskia*, *Phaius* and *Triopteris*. It seems desirable to re-emphasize the fact that such corrections, when based on *purely philological* grounds, are absolutely contrary to the International Rules of Nomenclature (see *Kew Bull.* 1928, p. 340). It should in fairness be pointed out that most of the "corrections" in question were made

*See *K.B.* 1928, pp. 294-296, 341. The case of *Rhododendron* shows that precedence should be given to "general usage" over "agreement with the Recommendations."

*before* the appearance of the present International Rules. Many botanists, however, still seem to think that the Rules require that Greek terminations of botanical names should be latinized, whereas this is merely a Recommendation for the formation of such names in the future, and even so it does not apply to certain instances of Greek terminations which are sanctioned by custom (see Art. 7).

One unfortunate result of the Rule that the original spelling of a generic name must be retained is that what is virtually the same basal word occurring in a series of parallel generic names in the same family must in certain instances be spelt in two or even three different ways. Thus in the family Malpighiaceae the word denoting the wing of the fruit appears as *-pteris*, *-pterys* and *-pteryx*. (*Triopteris*, *Tetrapteris*; *Aspidopterys*, *Brachypterys*; *Rhinopteryx*.) The only method of securing uniformity of termination under the Rules would be by means of conserving particular spellings. For this there are precedents, *e.g.*, *Vochysia*‡ has been conserved against *Vochy*, *Cajanus* against *Cajan*, and *Sesbania* against *Sesban*. But in these instances there was a *great preponderance of usage* in favour of *Vochysia*, *Cajanus*, and *Sesbania* respectively, and there is no such preponderance in the case of the malpighiaceous generic names in question.

Where a particular spelling of a generic name is widely used by the general public, or in horticulture, as well as by botanists in general, but has to be rejected under a strict application of the Rules of Nomenclature, there seems to be a good case for its conservation. It is accordingly suggested that the spellings *Bougainvillea* (vide *Kew Bull.* 1928, p. 349) and *Helichrysum* should be conserved. The cases for the conservation of the forms *Haplolophium* (vice *Aplolophium*), *Haplopappus* (vide *Kew Bull.* 1928, 344), *Haplophyllum* Reichb. (l.c. 345), and *Heleocharis* (vice *Eleocharis*), are not so strong, as these names are less widely used. *Aubrietia* is exceedingly well known, but differs so little from *Aubrieta* (the correct spelling under the Rules), that it is perhaps hardly worth while conserving it.

**Alloeanthus** *Thwaites* (hic corr.). *Allaeanthus* Thwaites in Hook. Kew. Journ. Bot. 1854, vi. 302, t. 9 B, errore orthographico; Thwaites, Enum. Pl. Zeyl. 263 (1861); Bur. in DC. Prodr. xvii. 222 (1873); Hook. f. Fl. Brit. Ind. v. 490 (1888); Trimen, Handb. Fl. Ceylon, iv. 102 (1898). *Allacanthus* Engl. in Engl. et Prantl, Nat. Pflanzenfam. iii. Abt. 1, 74 (1888).—It seems clear that *Allaeanthus* was an *unintentional* orthographic error for *Alloeanthus*, from ἄλλοῖος, different in appearance, and ἄνθος, flower, a name evidently given by Thwaites in allusion to the very different appearance of the male and female inflorescences (and flowers). The spelling *Alloeanthus* may

‡The list of nomina conservanda gives "*Vochysia* Juss.," but Jussieu spelt the name *Vochisia*. It was Poiret who proposed the spelling *Vochysia*. In the circumstances it is doubtful whether *Vochisia* Juss. or *Vochysia* Poir. is intended to be conserved.

therefore be attributed to Thwaites. He made the same slip in publishing the following generic name.

**Alloeophania** *Trimen*, Handb. Fl. Ceylon, ii. 301 (1894). *Allaeophania* Thwaites, Enum. 147 (1859); Hook. f. Fl. Brit. Ind. iii. 48 (1880).—Thwaites mentioned that "in general appearance this species [*A. decipiens*] bears a very great resemblance to *Hedyotis nodulosa* Arn." which belongs to a different tribe of the Rubiaceae. Evidently he formed the generic name from ἀλλοῖος, different, and — φάνεια, appearance, because the shrub had the appearance of a very different genus. The spelling *Alloeophania* may therefore be ascribed to Thwaites.

**Androsiphon** *Schlechter* in Notizbl. Bot. Gard. Berlin, ix. 147 (1924).—Under Art. 24, the spelling of this and the following name may not be altered. Hence they are to be regarded, under Art. 57, as different names. There does not seem to be any serious risk of confusion, as *Androsiphon* belongs to Liliaceae, whereas *Androsiphonia* is a genus of Passifloraceae.

**Androsiphonia** *Stapf* in Journ. Linn. Soc., Bot. xxxvii. 101 (1905).

**Antigonia** *Vell.* Fl. Flum. 186 (1825); et op. cit. iv. t. 145 (1827).

**Antigonon** *Endl.* Gen. 310 (1837). *Antigonum* Reichb. Nomencl. 163, n. 6334 (1841). *Antigonium* A. Juss. in Orb. Dict. x. 386 (1849).—*Antigonon* is not invalidated by *Antigonia* Vell. (1825). Under Art. 57, they are regarded as different names. Hence there is no justification under International Rules for replacing *Antigonon* by *Corculum* Stuntz (1913).

**Atamosco** *Adans.* Fam. ii. 57 (1763). *Atamosko* Adans. l.c. 522. *Atamasco* Rafin. Neogenyton, 3 (1825).—Adanson cited figures given by Plukenet, Morison and Catesby, as the basis of his genus *Atamosco*. Plukenet (Alm. 220) spelt the name as "Atamusco" (under *Lilio-Narcissus Indicus pumilus monanthes albus*); Morison (Hist. ii. 366, n. 30, sect. 4, t. 24, fig. 4) gave it as "Atamosco vulgo hortulanis dictum"; and Catesby (Carol. App. 12) had "Attamusco Lily." Adanson adopted Morison's spelling and his ascription of the name to the "Hortulani." Although it is now known that the correct form of the vernacular name of the Atamasco Lily (*Zephyranthes*) is "Atamasco," the spelling chosen by Adanson must be retained under Art. 24 of the Rules.

*Atamosco* Adans. antedates the well-known generic name *Zephyranthes* Herb. (1821), but the latter has recently been proposed for conservation (Fernald and Weatherby, Circular dated December, 1927).

**Balduina** *Nutt.* (vide *Kew Bull.* 1928, 346).—Definite evidence that Nuttall latinized Baldwin's name as "Balduinus" has now come to light. A new *Polygala* collected by Dr. Baldwyn [sic] in Florida was described by Nuttall (Gen. ii. 90) under the name *P. Balduini*.

**Bischofia** *Blume* Bijdr. 1168 (1826); Fl. Jav. Praef. p. vi. in adnot. (1828). *Bischoffia* Decne in Orbigny, Dict. ii. 580 (1842).—Blume named the genus in honour of G. W. Bischoff, but appears deliberately to have used the spelling *Bischofia* with one "f", as being a more acceptable Latin form. The fact that he retained this spelling in the preface to his 'Flora Javae,' where he corrected *Acanthophippium* to *Acanthephippium*, and *Etaeria* to *Hetaeria*, etc., confirms this view.

**Byttneria** *Loefl.* Iter Hisp. 313 (1758); Linn. Syst. ed. 10, 939 (1759); DC. Prodr. i. 486. *Bytneria* Jacq. Hort. Vindob. i. 10 (1770). *Büttneria* Murr. Syst. 197 (1774). *Buttneria* Aubl. Hist. Pl. Guiane, i. 241 (1775). *Büttnera* J. F. Gmel. Syst. ii. 404 (1791). *Bütneria* Jacq. Hort. Schoenbr. i. 46 (1797). *Buettnera* Link, Enum. i. 243 (1821). *Buettneria* Benth. Fl. Hongkong. 39 (1861).—The original spelling *Byttneria* should be retained under the Rules. Loefling and Linné were at liberty to latinize Buettner's name as "Byttnerius," and consequently to form the generic name *Byttneria*. The case is comparable to those of *Furcraea* (*Fourcroya*), *Jussiaea* (*Jussieua*) and *Valantia* (*Vaillantia*), q.v.

**Calodendrum** *Thunb.* Nov. Gen. ii. 41 (1782). *Calodendron* Juss. in Dict. Sc. Nat. vi. 258 (1805).

**Cassytha** *L.* Sp. ed. 1, 35 (1753). *Cassyta* L. Gen. Pl. ed. 5, 22 (1754).—Linné took the name from Osbeck, who spelt it *Cassytha* when he published the account of his travels (Iter, 243; 1757). Hence the spelling *Cassyta* which appeared in Gen. Pl. ed. 5 and 6 may be regarded as a lapsus calami on the part of Linné, or alternatively as a typographical error.

The name *Cassytha* was used by Fuchs, Hist. 348 (1542) for the genus now known as *Cuscuta*. Rumphius, Herb. Amboin. v. 491, t. 184, fig. 4, used both *Cussuta* and *Cussutha*, for *Cassytha filiformis* L.

**Cephalipterum** *A. Gray* in Hook. Kew Journ. Bot. iv. 271 (1852). *Cephalopterum* Post et Kuntze, Lexic. Gen. Phan. 110 (1903).—The genus is distinguished from *Helipterum* by its glomerate capitula *inter alia*, and the name was a compound of κεφαλή and *Helipterum*. The fact that the name was telescoped is not a valid reason for altering it under the Rules. See *Kew Bull.* 1928, p. 340.

**Cleistochlamys** *Oliv.* in Journ. Linn. Soc. ix. 175 (1867). *Clistochlamys* Post et Kuntze, Lexic. Gen. Phan. 130 (1903).—The Greek vowels "ει" are sometimes transliterated "ei," as in *Cheiranthus*, sometimes "i" as in *Chimonanthus*. The original spelling should be retained in such cases.

**Clistoyucca** *Trelease* in Rep. Miss. Bot. Gard. xiii. 41 (1902). *Cleistoyucca* Eastw. in Occas. Papers Calif. Acad. Sc. ix. 33 (1905).—See the remarks under *Cleistochlamys*.

**Clutia** *L.* Sp. 1042 (1753); Gen. Pl. ed. 5, 464 (1754). *Cluytia* Willd. Sp. Pl. iv. 879 (1806).—The genus *Clutia* was named by Boerhaave in 1720 in honour of Outger Cluyt, who latinized his own name as "Augerius Clutius." Linné accepted the spelling *Clutia* in 1753-54 and no-one seems to have changed it until 1806, when Willdenow added a "y." Linné was free to adopt the euphonious Latin form *Clutia*, and Willdenow's alteration of the name is unwarranted by the Rules. The spelling *Cluytia* is commonly but erroneously attributed to Reichard, Gen. Pl. ed. 7, 530 (1778).

**Daniellia** *J. J. Benn.* in Pharm. Journ. xiv. 252 (1854). *Daniella* Benth. in Benth. et Hook. f. Gen. Pl. i. 580 (1865).—The generic name commemorates Dr. William Freeman Daniell, and is formed in accordance with Rec. IVb of the International Rules. In any case Bennett was at liberty to latinize Daniell's name as he pleased.

**Diplorhynchus** *Welw. ex Ficalho et Hiern* in Trans. Linn. Soc., ser. 2, Bot. ii. 22 (1881). *Diplorrhynchus* K. Schum. in Engl. et Prantl, Nat. Pflanzenfam. iv. Abt. 2, 142 (1895).—This case is comparable with that of *Osmorhiza* (*Kew Bull.* 1928, 359). The addition of a second "r" is not permissible under Art. 24.

**Dolichokentia** *Becc.* (hic corr.). *Dolicokeutia* Becc. in Webbia, v. 74, 113 (1921). *Dolycokentia* Becc. l.c. t. 8.—Beccari evidently intended to combine the adjective "dolichos" with the generic name *Kentia*, and the omission of the "h" may therefore be regarded as an *unintentional* orthographic error. The fact that the name is differently spelt in the text and on the plates suggests that he wrote it down carelessly; and he died before the paper appeared.

**Elaeodendron** [*J. F. Jacq. ex*] *Jacq.* Ic. Pl. Rar. i. t. 48 (1781-84); et op. cit. p. 5 (1786); J. F. Jacq. in Nov. Act. Helvet. i. 36 (1787). *Elaeodendrum* Murr. Syst. 241 (1784). The plates of Jacquin's Icones were published in parts during the period 1781-86. As Murray cited "Jacq. icon. rar." he had evidently seen the plate in question, so that it must have been published not later than 1784; Jacquin's text, on the other hand, was presumably published as a whole in 1786 with the last instalment of the plates. It contains references to Murray's edition of Linné's Systema (1784).

Under Art. 37, 38 of the International Rules, a plate containing analyses is accepted as equivalent to a description: hence the earliest effective publication of the generic name was in the form *Elaeodendron*, which should be accepted as the correct spelling.

**Eriodendron** *DC.* in DC. Prodr. i. 479 (1824). *Eriodendrum* Post et Kuntze, Lexic. Gen. Phan. 204, 598 (1903).—*Eriodendron* DC. is an invalid name, since it was based on *Bombax pentandrum* L. which is also the type of *Ceiba* Mill. (1754). The correct name of the genus is *Ceiba* Mill.

**Erythroxylum** *P. Br.* Hist. Jam. 278 (1756). *Erythroxylon* L. Syst. ed. 10, 1035 (1759).—Briquet (Bull. Herb. Boiss. sér. 1, ii. 64-68 : 1894) came to the conclusion that Patrick Browne's generic names were valid, whereas Rendle (Journ. Bot. 1912, 129), who did not cite Briquet's paper, held them to be invalid on the ground that " his descriptions are of species only." Without entering into a discussion of this general question, it may be stated that *Erythroxylum* P. Br. appears to be a valid generic name for the following reasons. Browne based the new generic name *Erythroxylum* on his first species *Erythroxylum.* 1. *foliis ellipticis, lineis binis longitudinalibus subtus notatis* : *fasciculis florum sparsis.* He gave a description under 6 headings from " Periantium " to " Semen " exactly corresponding with those of the genera in Linn. Gen. Pl. ed. 5 (1754), which work he apparently used as a model. The only two reasons for not regarding Browne's description as generic, are (1) that it occurs *under* the first species, after the specific diagnosis and synonymy, instead of preceding the account of the two species, a question of arrangement, and (2) that it contains the statement that the styles are longer than the stamens, which applies only to his first species, the diagnostic phrase of the second species including the information " stylis brevissimis." Browne's remarks under species 2 show that he at all events regarded his description as containing the essential generic characters. " This tree differs much from the foregoing, both in shape and the manner of its growth ; but it answers the essential characters thoroughly." The fact that a character peculiar to the type-species is inserted in a generic description can hardly be held to invalidate that generic name.

**Ferdinanda** *Lag.* Gen. et Sp. Pl. 31 (1816).

**Ferdinandusa** *Pohl,* Pl. Bras. Ic. ii. 8, tt. 106—108 (1831). *Ferdinandea* Pohl in Flora, x. 153 (1827).—Pohl was justified in altering the generic name since in its original form it was invalidated by *Ferdinanda* Lag. (1816). It is unfortunate however that he should have chosen such a badly formed substitute (*Ferdinandus-a*).

**Fernandoa** *Welw. ex Seem.* in Journ. Bot. iv. 123 (1866). *Ferdinandia* Welw. ex Seem. l.c. iii. 330 (1865), errore typographico. *Ferdinandoa,* Seem. l.c. viii. 280 (1870). *Ferdinanda* Benth. et Hook. f. Gen. Pl. ii. 1047 (1876), in obs. *Fernandia* Baill. Hist. Pl. x. 47 (1888).—The generic name was originally published as *Ferdinandia,* but a corrigendum appeared in the following year explaining that this was a misprint for *Fernandoa,* the name of the then King of Portugal being " Fernando." In any case the existence of the valid name *Ferdinanda* Lag. (1816), automatically invalidates *Ferdinandia* Welw. ex Seem. (1865).

**Gerardiina** *Engl.* in Engl. Jahrb. xxiii. 507 (1897).—Named from its similarity in general appearance with the allied genus *Gerardia* L. (Scrophulariaceae). The latter commemorates John Gerard

(Plum. Nov. Gen. 30 : 1703). It is perhaps regrettable that Engler should have chosen a generic name so closely approximating to *Gerrardina* Oliv., but as the two genera belong to different families, and as their names differ in two letters, there does not seem to be any serious risk of confusion, and both will stand under the International Rules.

**Gerrardina** *Oliv.* in Hook. Ic. Pl. t. 1075 (1870). *Gerrardiana* B. D. Jackson, Ind. Kew. i. 1024 (1893), sphalm.—*Gerrardina* (Samydaceae) commemorates the Natal collector, W. T. Gerrard, in whose honour *Gerrardanthus* Harv. was also named.

**Glechoma** *Boehm.* in Ludw. Def. Gen. Pl. ed. 3, 115 (1760) ; Gmel. Fl. Sibir. iii. 242 (1768). *Glecoma* L. Sp. ed. 1, 578 (1753) ; Gen. Pl. ed. 5, 251 (1754).—The generic name was published as *Glechoma* in L. Gen. Pl. ed. 1, 171 (1737), and was so spelt in Hort. Cliff. 307 (1737), Gen. Pl. ed. 2, 269 (1742), Fl. Suec. 175 (1745), Syst. Nat. ed. 6, impr. Lipsiae, 114 (1748), Phil. Bot. 34, 152, 187 (1751). In Phil. Bot. 187 Linné derived the name from γλήχων, *Pulegium*, so that the spelling with " ch " is philologically correct. In the circumstances it would have been absurd for Linné deliberately to have omitted the " h," so that we may be reasonably certain that the spelling *Glecoma* was due to a lapsus calami on his part, or to a typographical error. Boehmer evidently took that view, as he cited " *Glechoma* L. Gen. Pl. ed. 5, n. 634." The spelling *Glechoma* may accordingly be attributed to Linné.

**Guaiacum** *L.* Gen. Pl. ed. 5, 179 (1754). *Guajacum* L. Sp. Pl. ed. 1, 381 (1753).—Linné used both forms, both before and after 1753-54. He adopted *Guaiacum* in Gen. Pl. ed. 1, 140 (1737), ed. 2, 180 (1742), and ed. 6, 208 (1764) ; and *Guajacum* in Hort. Cliff. 187 (1737), Syst. Nat. ed. 6, reimpr. Lipsiae, 104 (1748), Mat. Med. 70 (1749), Sp. Pl. ed. 2, 546 (1762), and Syst. Nat. ed. 10, 1018 (1759). The name was originally published as *Guaiacum* by Plumier, who explained it as follows : " *Guaiacum*, vulgo guaiac, nomen est americanum, satis apud Europam notum " (Nov. Pl. Am. Gen. 39 : 1703). Of the two forms used by Linné in 1753-54, *Guaiacum* should be accepted as the correct spelling, not only because it was the first pre-Linnean spelling, but more especially because there is a *great preponderance of botanical usage* in its favour (vide supra, p. 39, suggestion II. 3.).

*Guaiacum* was accepted, for example, in Juss. Gen. 296 (1789), Willd. Sp. ii. 538 (1799), Pers. Syn. i. 462 (1805), A. Juss. in Mém. Mus. Hist. Nat. Par. xii. 456 (1823), DC. Prodr. i. 706 (1824), Spreng. Syst. ii. 322 (1825), Endl. Gen. 1164 (1840), Benth. et. Hook. f. Gen. Pl. i. 267 (1862), Hemsl. Biol. Centr.-Amer., Bot. i. 159 (1879), Dalla Torre et Harms, Gen. Siphonog. 249 (1901), North Amer. Fl. xxv. 105 (1910), Small, Fl. S.E. United States, ed. 2, 671 (1913), and Fawcett et Rendle, Fl. Jam. iv. 163 (1920).

*Guajacum* was adopted in Engl. et Prantl, Nat. Pflanzenfam. iii. Abt. 4, 82 (1890), Post et Kuntze, Lexic. Gen. Phan. 258 (1903), and Urb. Symb. Antill. viii. 317 (1920).

**Hetaeria** *Blume*, Fl. Jav. praef. p. vii. (1828) in adnot. *Etaeria* Blume, Bijdr. 409, t. 14 (1825).—Blume explained (l.c., p. v), that several of the generic names proposed by him were faulty in construction, owing to his remoteness from Europe and consequent lack of literary resources. As he himself changed the spelling *Etaeria* to *Hetaeria*, it may reasonably be assumed that the omission of the initial " H " was due to an *unintentional* orthographic error on his part, such as may be corrected under the provisions of Art. 57.

**Hieronyma** *Baill.* Étude gén. Euphorb. 658 (1858); Muell. Arg. in DC. Prodr. xv. sect. 2, 268 (1866), et in Mart. Fl. Bras. xi. pars 2, 19 (1873); Benth. in Benth. et Hook. f. Gen. Pl. iii. 284 (1880); Dalla Torre et Harms, Gen. Siphonog. 271 (1901). *Hyeronima* Allem. in Trab. Soc. Velloz. (1848), in textu; et in Arch. Palestr. Sc. Rio de Janeiro, i. 56, cum tabula (1858). *Hieronima* Allem. l.c. (1848), in tabula. *Hieronymia* Pax in Engl. et Prantl, Nat. Pflanzenfam. iii. Abt. 5, 28 (1890).—The genus was dedicated by Allemão as follows: " Hoc genus dixi in memoriam *Jeronimo Serpa* nuper defuncti, qui Horto Botanico Olindensi praefuit, et Elementa Botanices cl. *Ach. Richard* ex gallico sermone in vernaculum vertit." Allemão evidently wished to give the classical equivalent of the Portuguese name Jeronimo, with a feminine termination, *i.e.*, *Hieronyma*, but transposed the " i " and the " y " in the text and replaced the " y " by an " i " on the plate. As the original spellings *Hyeronima* and *Hieronima* are due to *unintentional* orthographic errors, it is legitimate to discard them in favour of *Hieronyma*. As will be seen from the references given above, this conclusion has been generally adopted. For some unexplained reason, however, the form *Hyeronima* was upheld in Ind. Kew. i. 1186 (1893).

**Howea** *Becc.* Malesia, ii. Errata (1886). *Howeia* Becc. Malesia, i. 66 (1877).—As Beccari himself corrected the original spelling *Howeia*, it may be regarded as an *unintentional* orthographic error.

**Hypochoeris** *L.* Gen. Pl. ed 5, 352 (1754). *Hypochaeris* L. Sp. Pl. ed. 1, 810 (1753).—From 1737 onwards Linné seems to have employed both spellings, *Hypochoeris* and *Hypochaeris*, indifferently. *Hypochoeris* occurs in Gen. Pl. ed. 1, 238 (1737), Fl. Lapp. 231 (1737), Gen. Pl. ed. 2, 377 (1742), Phil. Bot. 187, 335 (1751), Gen. Pl. ed. 6, 405 (1764). *Hypochaeris* occurs in Hort. Cliff. 385 (1737), Fl. Suec. ed. 1, 227 (1745), Syst. Nat. ed. 6, reimpr. Lipsiae, 125 (1748), Hort. Upsal. 240 (1748), Phil. Bot. 29, 152, 273 (1751), Fl. Suec. ed. 2, 276 (1755), Syst. Nat. ed. 10, 1197 (1759), Sp. Pl. ed. 2, 1140 (1763).

It seems clear that Linné generally worked too rapidly to concern himself about such minutiae as whether a particular diphthong should be spelt " ae " or " oe." In a book which passed through

two or more editions, the spelling adopted by him in the first edition was generally retained in all later ones. Even in his ' Philosophia Botanica ' he did not take the trouble to adopt a uniform spelling of *Hypochoeris*, but on p. 187 of that work where he gave the *derivation of the name*, from χοῖρος, porcus, and ὑπό, diminutivum, he spelt it *Hypochoeris*, and he presumably would exercise most care in spelling when he was treating a generic name as a *name*, and supplying its derivation. Hence the spelling *Hypochoeris* may be regarded as his definite choice. Even if this is not admitted, *Hypochoeris* should still be adopted, as Linné used both spellings in 1753-4, and *Hypochoeris* is philologically correct, whereas *Hypochaeris* is not (vide supra, p. 39, suggestion II. 2.).

**Lefebvrea** *A. Rich.* in Ann. Sc. Nat. sér. 2, xiv. 260 (1840). *Lefeburea* Endl. Gen., Suppl. 2, 69 (1842). *Lefeburia* Lindl. Veg. Kingd. 778 (1847).—The generic name was given by A. Richard in compliment to Lefebvre, a lieutenant in the French navy, and was formed in accordance with Rec. IVa of the International Rules.

**Mammillaria** *Haw.* Syn. Pl. Succ. 177 (1812). *Mamillaria* Reichb. in Moessler, Handb. ed. 2, i. p. 1 (1827).—Haworth published the generic name as " *Mammillaria* (Mammillary Thistle)," basing it on *Cactus mammillaris* L. Sp. 466. In his description he used the spelling " mammillae " not " mamillae " for the tubercles characteristic of the genus. The fact that " mamilla " is the correct Latin form of that word does not justify the alteration of the spelling *Mammillaria* deliberately chosen by Haworth. The name is incorrectly included as " *Mamillaria* Haw." in the list of nomina conservanda, but that spelling was merely taken from Dalla Torre et Harms, Genera Siphonogamarum. There is no evidence that the question of conserving the later (and philologically preferable) spelling " *Mamillaria* Reichb." was ever considered by the International Congress.

**Markea** *L. C. Rich.* in Act. Soc. Hist. Nat. Paris, i. 107 (1792). *Lamarkea* Pers. Syn. i. 218 (1805). *Lamarckia* Vahl in Danske Nat. Selsk. Skrivt. vi. 93 (1810). *Marckea* A. Rich. in Dict. Class. Sc. Nat. x. 168 (1826). *Lamarkia* G. Don, Gen. Syst. iv. 487 (1837). *Lamarckea* Steud. Nomencl. ed. 2, ii. 6 (1841).—L. C. Richard appears to have latinized Lamarck's name as " Markeus," omitting the " c " on the ground that the combination of letters " ck " could not occur in a Latin word. In any case he published his new genus of Solanaceae under the name *Markea*, and that spelling must be retained. The fact that five different variants for it were proposed during the period 1805-1841 illustrates the confusion sometimes brought into nomenclature by those who seek to " correct " generic names.

**Mezoneuron** *Desf.* in Mém. Mus. Hist. Nat. Paris, iv. 245 (1818). *Mezoneurum* DC. in DC. Prodr. ii. 484 (1825).—There is no valid philological reason for latinizing the termination, since many Greek

nouns retained their original endings when brought into the Latin language (vide *Rhododendron*, p. 50). Nor are such changes of the original spelling permitted under the Rules of Nomenclature.

**Millettia** *Wight et Arn.* Prodr. 263 (1834). *Milletia* Meisn. Gen. i. 95, ii. 68 (1837).—There is no justification for the spelling *Milletia*, which was adopted by Durand and Jackson in the first Supplement to the Index Kewensis: the genus was named in honour of Dr. Charles Millett, of Canton.

**Mitracarpus** *Zucc. apud Schult.* in Roem. et Schult. Syst. iii. Mant. 210 (1827), in obs., et l.c. 399 (index). *Mitracarpum* Cham. et Schlecht. in Linnaea, iii. 358 (1828). *Mithracarpus* Reichb. Consp. 94 (1828). *Mitrocarpum* Hook. et Arn. in Hook. Bot. Misc. iii. 360 (1833). *Mitracarpium* Benth. in Hook. Journ. Bot. iii. 238 (1841). *Mitrocarpus* Post et Kuntze, Lexic. Gen. Phan. 369 (1903.) —For nearly sixty years the spelling *Mitracarpum* was attributed to Zuccarini, whereas the generic name, as published, was actually *Mitracarpus*. The origin of this blunder was as follows: Schultes mentioned the new generic name in the *accusative* case in a Latin note after *Spermacoce*: "Genus a *Spermacocibus* separandum, et ad quod plures hujus generis species brasilienses sibi pertinere videntur, benigne communicavit cls Zuccarini, ob superiorem capsulae partem deciduam mitraeformem *Mitracarpum* ab illo dictum. . . . Zuccarini in litt. qui hujus generis unicam nobis indigitavit speciem: "*M. scabrum* in sabulosis prope Forte Louis crescentem." Had Chamisso and Schlechtendal consulted the index to Schultes, Mantissa, they would have discovered that the generic name was *Mitracarpus*, and the name of the species *M. scaber*. The facts of the case were pointed out in 1886 by A. Gray (Syn. Fl. N. Am. vol. i. part 2, p. 32), cited by K. Schum. in Mart. Fl. Bras. vol. vi. pars. 6, 79 (1888), but have nevertheless been overlooked in recent works.

**Montanoa** *Less.* Syn. 420 (1832). *Montañoa* Cerv. in La Llave et Lexarza, Nov. Veg. Descr. fasc. ii. 11 (1825). *Montagnaea* DC. in DC. Prodr. v. 564 (1836).—As already indicated (*Kew Bull.* 1928, p. 356, sub *Luehea*), the sentence "Letters which are unknown to botanical Latin must be transcribed, diacritic signs are suppressed" seems intended to have the force of a Rule, although it forms part of a Recommendation (IVc). If this view is correct, the "ñ" in *Montañoa* should be replaced by an "n" as above.

**Mundia** *Kunth* in H. B. K. Nov. Gen. v. 392, adnot. 1 (1823). *Mundtia* Harv. in Harv. et Sond. Fl. Cap. i. 95 (1859-60).—Kunth did not supply the derivation of *Mundia*, but the genus was evidently named in honour of the South African collector, Mund, who was a surveyor at Swellendam. There is no justification for the spelling *Mundtia*; the name of the collector appears as "Mund" on the labels of his herbarium specimens (*e.g.*, *Lithospermum scabrum* Thunb.), and he signed himself "L. Mund" in two letters addressed

in 1827 and 1829 to W. J. Hooker (Hook. Corresp. lviii. 208, 210). Ecklon and Zeyher described *Polygala Mundiana* from "Herb. Mund."

**Najas** *L.* Sp. ed. 1, 1015 (1753); Gen. Pl. ed. 5, 445 (1754). *Naias* Juss. Gen. 19 (1789).—Linné seems to have consistently employed the form *Najas*, so that there is no justification under the International Rules for using the philologically preferable spelling *Naias*.

**Nemastylis** *Nutt.* in Trans. Am. Phil. Soc. v. 157 (1837). *Nemostylis* Herb. in Bot. Mag. sub t. 3779 (1840). *Nemastylus* Baker in Journ. Linn. Soc., Bot. xvi. 74, 102 (1877). *Nematostylis* Baker, Handb. Irid. 243 (1892). *Nemostylus* Dalla Torre et Harms, Gen. Siphonog. 81, n. 1274 (1900), in syn.

**Oenothera** *L.* Sp. ed. 1, 346 (1753); Gen. Pl. ed. 5, 163 (1754). *Aenothera* Lam. Encycl. iv. 550 (1797). *Onothera* St. Lag. in Ann. Soc. Bot. Lyon, xviii. 143 (1893).—St. Lager (l.c.) published a learned paper on the spelling of this generic name, and came to the conclusion that *Onothera* was the philologically correct form. The generic name *Oenothera* L., however, was taken by Linné from Theophrastus, Historia Plantarum, ed. Bodaeus, 1172 (1644). Linné rejected the name *Onagra*, which had been adopted by Tournefort for this genus, on the ground that it was the name of an animal: "Oenothera nomen est Theophrasti, Lysimachiarum siliquosarum, ut creditur, synonymon, quod huic generi proprium volo; quid Botanicis cum Asinis vel Onagris? quid animalia hybrida pro nominibus plantarum" (Hort. Cliff. 144). It is therefore clear that he would equally have rejected the name *Onothera*, meaning "wild ass." Linné derived *Oenothera* from οἶνος, wine and θήρα, so that there is no doubt that that spelling was deliberately chosen by him.

**Paradaniellia** *Rolfe* in Kew Bull. 1912, 96. *Paradaniella* Thonner Fl. Pl. Afr. 636 (1915).—See also *Daniellia*.

**Phaius** *Lour.* Fl. Cochinch. 529 (1790). *Phajus* Lindl. Orch. Gen. et Sp. 126 (1831). *Phaios* Wittst. Etym.-bot. Handwörterb. ed. 2, 677 (1856). *Phaeus* Post et Kuntze, Lexic. Gen. Phan. 429 (1903).—It would have been better had Loureiro chosen either the purely Greek form *Phaios* or the Latin *Phaeus*, but his choice of *Phaius* must stand. There is no justification, either philological or nomenclatural, for the uncouth spelling *Phajus*.

**Pleurostylia** *Wight et Arn.* Prodr. 157 (1834). *Pleurostylis* Walp. Rep. i .526 (1842).—Wight and Arnott were free to give any termination they pleased to their new generic name *Pleurostylia*, and Walpers was therefore not justified in altering the original spelling (Art. 24).

**Plumeria** *L.* Sp. ed. 1. 209 (1753); Gen. Pl. ed. 5, 99 (1754). *Plumiera* Adans. Fam. ii. 172 (1763). *Plumieria* Scop. Introd. 155

(1777).—Linné at first (Gen. Pl. ed. 1, 66: 1737) adopted Tournefort's name *Plumeria*, but in 1751 (Phil. Bot. 31) he changed it to *Plumieria*, perhaps by accident, since he also used the other form *Plumeria* in the same work (Phil. Bot. 86, 147, 172).

In any case, he reverted to *Plumeria* in 1753-54, and that spelling should therefore be accepted. Incidentally it may be mentioned that the form *Plumeria* is philologically better than *Plumiera* (vide Journ. Bot. 1921, 347).

**Ptaeroxylon** *Eckl. et Zeyh.* Enum. 54 (1835). *Ptaeroxylum* Post et Kuntze, Lexic. Gen. Phan. 467 (1903).—Although botanists are recommended to latinize the terminations of new generic and other names proposed by them (Art. 7), they are not obliged to do so, and if a Greek termination was chosen when a name was effectively published, it must be retained under Art. 15, 24, and 50 of the International Rules.

**Rhododendron** *L.* Sp. Pl. ed. 1, 392 (1753); Syst. Nat. ed. 10, 1023 (1759); Sp. Pl. ed. 2, 562 (1762). *Rhododendrum* L. Gen. Pl. ed. 5, 185 (1754); Gen. Pl. ed. 6, 218 (1764).—In this, as in so many other cases, Linné adopted one spelling in Sp. Pl. ed. 1, 2, and Syst. Nat. ed. 10-12, and a different one in Gen. Pl. ed. 5, 6. Art. 7 states that "Scientific names are in Latin for all groups. When taken from another language, a Latin termination is given them, except in cases sanctioned by custom." This might at first sight seem to indicate that *Rhododendrum* was the correct spelling according to the Rules. But in the first place, as pointed out in *Kew Bull.* 1928, p. 339, Art. 7 is not a "rule" but a "guiding principle," and has merely the status of a "recommendation" Such generic names as *Coupoui, Manihot and Quamoclit* are neither Latin nor latinized, yet they are valid under International Rules. Secondly, many Greek words were taken into Latin without alteration in their terminations, as may be seen in such works as Pliny's Historia Naturalis (*e.g., Cirsion, Enneaphyllon, Leuce, Periclymenos*, etc.), so that such terminations may be regarded as being "sanctioned by custom."

The concluding sentence of Art. 5 is applicable to the case of *Rhododendron* versus *Rhododendrum*: "Finally in the absence of a rule, or where the results of a rule are doubtful, established custom becomes law." As the established custom is to use the spelling *Rhododendron*, that is the correct form under International Rules.

**Scottellia** *Oliv.* in Hook. Ic. Pl. t. 2265 (1893). *Scottelia* Engl. in Engl. et Prantl, Nat. Pflanzenfam., Register zu Teil ii-iv, 389 (1899).—"The generic name is contrived to commemorate as euphoniously as possible the important botanical services of my friend Mr. G. F. Scott-Elliot" (Oliv. l.c.). *Scottellia* being an *arbitrarily* formed generic name must be retained with its original spelling. The fact that the name of the collector was "Scott-Eliot" (with one "l") is immaterial. Even had Oliver been aware

of this, he might quite well have doubled the " l " in order to obtain a *euphonious* generic name preserving as far as possible the *sound* of the collector's name, just as Ruel was latinized as Ruellius and commemorated in *Ruellia*.

**Sideroxylon** *L.* Sp. Pl. 192 (1753). *Sideroxylum* L. Gen. Pl. ed. 5, 89 (1754).—Linné (Gen. Pl. ed. 1, 58 : 1737) took up the generic name *Sideroxylum* from Dillenius (Hort. Elth. 357, t. 265 : 1732), who traced it back to *Sideroxylum Africanum seu Lignum ferrea duritie folio oblongo* Hermann, Parad. Bat. Prodr. 375 (1689). Linné adopted the spelling *Sideroxylum* in the successive editions of his Genera Plantarum (1737-64). In Hort. Cliff. 69 (1737) he used *Sideroxylon* as the generic heading, but named his two species *Sideroxylum inerme* and *Sideroxylum spinosum* respectively. In Sp. Pl. ed. 1 and 2 (1753-63), and Syst. Nat. ed. 10-12 (1759-68) he adopted *Sideroxylon*.

In the circumstances, *general usage* should be followed, and as *Sideroxylon* has been adopted in Endl. Gen. Pl., Benth. et Hook. f. Gen. Pl., Engl. et Prantl, Nat. Pflanzenfam., and Dalla Torre et Harms, Gen. Siphonog., it should be accepted as the correct spelling.

(1) **Toxicodendron** *Mill.* Gard. Dict. Abridg. ed. 4 (1754). *Toxicodendrum* Moench, Meth. 73 (1794).—Anacardiaceae.

(2) **Toxicodendrum** *Thunb.* in Vet. Akad. Nya Handl. Stockholm, xvii. 188, t. 7 (1796). *Toxicodendron* Spreng. Anleit. ed. 2, ii. 367 (1817).—Euphorbiaceae. The existence of the valid prior homonym *Toxicodendron* Mill. automatically invalidates *Toxicodendrum* Thunb., whether the former is accepted as the name of an independent genus or not (Art. 51, 56). As a matter of fact, *Toxicodendron* Mill. is currently treated by some botanists as generically distinct from *Rhus* L. (*e.g.*, in Britton and Brown, Ill. Fl. ed. 2, ii. 483 : 1913), but in any case *Toxicodendrum* Thunb. should be replaced by *Hyaenanche* Lamb. (1797) under the International Rules of Nomenclature. It is unfortunate that this fact should have been overlooked by Pax and K. Hoffmann when they dealt with the genus in Engl. Pflanzenreich (iv. 147, xv), Euphorbiaceae-Phyllantheae, 284 (1922).

**Weigela** *Thunb.* in Vet. Akad. Handl. Stockh. 1780, 137, t. 5. *Weigelia* Schreb. Gen. i. 113 (1789).—Although the amended form *Weigelia* is in accordance with Rec. IVb of the International Rules, nevertheless the original spelling adopted by Thunberg must be retained under Art. 24.

**Ziziphus** *Mill.* Gard. Dict. Abridg. ed. 4 (1754) ; Boehm. in Ludw. Gen. ed. 3, 280 (1760). *Zizyphus* Adans. Fam. ii. 304 (1763). *Ziziphon* St. Lager in Ann. Soc. Bot. Lyon, vii. 70 (1880). *Zizyphon* St. Lager, l.c. 137.—The generic name appeared in the form *Ziziphus* in Pliny, Hist. Nat. lib. 12, cap. 23, ed. Alexander Benedictus, 94 (1507), ed. Harduin. i. 671, l. 26 (1723) ; also in Columella,

De re rustica, lib. 9, cap. 4, ed. Angelius, fol. 199, verso (1515), ed. Petrus Victorius, 317 (1541) ; and in Palladius, De re rustica, lib. 5 (Aprilis), cap. 4, ed. Angelius fol. 306, verso (1515). Dodoens, Pempt. 794 (1583), adopted *Zizyphus* in the text, but had the spelling *Ziziphus* above the figures. Clusius, Rar. Pl. Hist. i. 28 (1601), adopted *Ziziphus*. Caspar Bauhin, Pinax, 446 (1623), also chose the form *Ziziphus*, and so did Tournefort, Élem. i. 497, t. 403 (1694), Inst. i. 627 (1700), and Ruppius, Fl. Jen. 122 (1718), ed. Haller, 136 (1745). On the other hand Bodaeus, in his edition of Theophrastus, Hist. Pl. 329 (1644), preferred the spelling *Zizyphus*, which was also adopted by Ray, Hist. Pl. ii. 1533 (1688).

Miller chose the time-honoured spelling *Ziziphus*, and his choice is final under the Rules. There can be no question of an orthographic error on his part. The spelling " zizyphus " appears to be more correct philologically, according to Lewis and Short, Latin Dictionary, 2018 (1927), but it is not permissible under the Rules to make orthographic corrections based *solely* on philological grounds (vide *Kew Bull.* 1928, 340).

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## IX.—DAHLIA CORONATA HORT. T. A. Sprague.

A new *Dahlia* from Mexico, with slightly honey-scented flowers, was offered for sale under the name *Dahlia coronata* in January, 1908, by various Continental nurserymen, and brief notices of it appeared in Oesterreichische Garten-Zeitung, Jan. 1908, p. 19, Le Jardin, 5 Févr. 1908, p. 44, Gardeners' Chronicle, April 4, 1908, p. 218, and April 11, p. 237, Journal of Horticulture, May 7, 1908, p. 425, and Gartenflora, Nov. 1908, p. 595.

The following short account was given in *Kew Bull.* 1909, App. III, p. 88, accompanied by references to the periodicals mentioned above :

" A slender-growing plant 4–5 ft. high. Peduncles $1\frac{3}{4}$–$2\frac{1}{2}$ ft. long. Flower-heads orange-scarlet, sweet-scented, ray-florets slightly curved inwards."

An illustrated account of *Dahlia coronata* appeared in Le Jardin, 5 December 1910, in which it was stated that the plant came true from seed, and that it had been identified at Kew as a form of *D. coccinea* Cav. Comparison with the original and other descriptions and figures and with herbarium specimens of that species, however, shows that it differs in several respects.

The following are the important characters :—

*D. coccinea* Cav. Outer involucral bracts reflexed ; capitulum obovoid or obovoid-globose in bud. Leaves bipinnate, biternate or simply pinnate, appressed pilose on the upper surface, distinctly pilose on the nerves beneath.

*D. coronata* Hort. Outer involucral bracts appressed in bud, then spreading ; capitulum subcylindric in bud. Leaves biternate or simply pinnate, glabrous on the upper surface—apart from a few

minute hairs on the nerves—indistinctly and sparingly pilose on the nerves beneath.

In view of these differences it seems desirable for the present to retain the name *Dahlia coronata* for the plant under discussion, although it is undoubtedly closely related to *D. coccinea*. A revision of the genus *Dahlia* is long overdue, but it should be pointed out that a satisfactory knowledge of the different species can only be obtained by studying the numerous forms in their native countries. Herbarium specimens of *Dahlia*, though indispensable for taxonomic purposes, do not preserve all the diagnostic characters required, and only a small proportion of the wild forms is in cultivation. When a more complete series is known, it is possible that *D. coccinea* and *D. coronata* may be found to be linked by a chain of intermediate forms, but in the absence of evidence to that effect, it is better, at present, to treat them as independent species.

The following short description, and a more complete one in Latin, have been drawn up from material communicated for the purpose by the John Innes Horticultural Institution, Merton.

**Dahlia coronata.** *Stem* finely striate, glaucous. *Leaves* simply pinnate and 5-foliolate, or biternate; leaflets ovate-oblong, the terminal one elliptic, sessile or subsessile in the pinnate leaves, shortly petiolulate in the biternate ones, the terminal leaflet long-petiolulate, irregularly serrate, with a narrow hyaline finely serrulate margin, glabrous on the upper surface except for a few minute hairs on the nerves, sparingly pilose with longish hairs on the nerves of the lower surface. *Peduncles* 20–35 cm. long, glandular in their upper part. *Capitula* subcylindric shortly before expansion, about 1 cm. long, and rather more in diameter. *Involucre* double, consisting of 5 outer bracts composing the involucre proper, and 8 inner bracts which subtend the ray-flowers; outer bracts appressed in the bud, then spreading, very broadly ovate, very shortly petioled, 9–11-ribbed; inner bracts lanceolate-oblong, obtuse, lower half erect, upper half spreading. *Ray-flowers* 8, without styles, but with large ovules. *Corolla-limb* about 3 cm. long and 2 cm. broad, minutely glandular-pilose beneath. *Fruiting capitulum* ovoid, the inner bracts appressed, accrescent, finally about 2·5 cm. long.

**Dahlia coronata** *Hort.* *Caulis* fistularis, subtiliter striata, glauca, superne purpureo-tincta, internodiis duobus superioribus 15–17 cm. longis. *Folia* alia biternata, alia pinnata. *Folia biternata* majora 18–19 cm. longa; petioli 5–6·5 cm. longi, profunde sulcati, linea elevata carnosa basi conjuncti, linea elevata saepe medio purpurea ibidemque fasciculo pilorum instructa, ut petiolorum bases pilis longis debilibus glanduloso-capitatis sparse ciliata; rhachis 5·5–7 cm. longa, profunde sulcata, nodis ejus valde pilosis; petioli secundarii 4–4·5 cm. longi, pilis parvis glanduloso-capitatis sparsissime ciliati subtus pilis similibus numerosioribus; petioluli foliolorum lateralium 0·5–1·5 cm. longi, terminalium 3 cm. longi;

foliola ovato-oblonga vel terminalia elliptica, terminalia circiter 4·5 cm. longa, 3–3·5 cm. lata, cetera multo minora, irregulariter serrata margine hyalino serrulato denticulis glanduloso-capitatis, supra opaca (sub lente valida papillata et paullulum lucidula), nervis venulisque leviter impressis, nervo medio et lateralibus minute pilosa, ceterum glabra, subtus nervo medio valde prominente lateralibus leviter elevatis, nervo medio pilis longiusculis sparse induto, nervis lateralibus et rete venularum pilis minoribus instructis; folia biternata minora 11–13 cm. longa, petiolis 3–4 cm. longis, rhachibus 4·5–5 cm. longis, petiolis secundariis 1·2–1·5 cm. longis bifoliolatis, petiolulo terminali 1·5 cm. longo, foliolo terminali 3·5 cm. longo, 2·5 cm. lato. *Folia pinnata* circiter 8 cm. longa, 5-foliolata, foliolis lateralibus superioribus sessilibus, inferioribus subsessilibus vel breviter (ad 5 mm.) petiolulatis, foliolo terminali circiter 5·5 cm. longo et 2·5 cm. lato. *Pedunculi* capitulorum terminalium 20–35 cm. longi, versus apicem glandulosi, ei lateralium multo breviores. *Capitula* paullulum ante apertionem breviter subcylindrica, 1 cm. longa et 1·2 cm. diametro. *Involucrum* duplex, exterius involucrum verum, interius e bracteis propriis florum radii compositum. *Phylli exteriores* 5, in alabastro appressi, demum patentes, latissime ovati, 7 mm. longi, 8–9 mm. lati, brevissime petiolati, 9–11-costati, atro-virides, perlucidi, extra minute glandulosi praesertim inferne, superne punctis parvis elevatis (basibus persistentibus glandularum) notati. *Phylli interiores* 8, lanceolato-oblongi, obtusi, 1·6–1·8 cm. longi, 0·8–0·9 cm. lati, dimidio inferiore erecto, dimidio superiore patente, straminei, membranacei. *Flores radii* 8, stylo nullo sed ovulo magno. *Ovarium* 1·5 mm. longum, 1·8 mm. latum, valde applanatum, marginibus minute crispule pilosis. *Corollae limbus* circiter 3 cm. longus, 1·8–2 cm. latus, aurantiacus, circiter 15-nervis, subtus minute glanduloso-pilosus, praesertim in nervis, nervis plus minusve elevatis; tubus plano-convexus, superficie exteriore in triente superiore densiuscule ceterum sparse glanduloso-pilosa, superficie interiore densiuscule glanduloso-pilosa. *Paleae* (seu bracteae propriae florum disci) ovato-oblongae, 9–10 mm. longae, 4·5–5 mm. latae, subtruncatae, superne minute eroso-dentatae. *Flores disci*: *Corollae tubus* parte inferiore albida 2·5–3 mm. longa, parte superiore lutea 4·5–5·5 mm. longa, lobis circiter 1 mm. longis. *Stylus* circiter 3 mm. e tubo exsertus, ramis 5 mm. longis inferne 1 mm. non-stigmaticis, ceterum stigmaticis. *Capitulum fructiferum* ovoideum bracteis involucri exterioribus patentibus, bracteis interioribus accrescentibus, tandum 2·5 cm. longis.

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## X.—LAGOSERIS MARSCH.-BIEB. AND LAGOSERIS HOFFMGG. & LINK. M. L. Green.

Many of the difficulties which arise in nomenclature are due to the existence of homonyms, that is to say identical names given independently to different plants. During the preparation of the

Seventh Supplement to the *Index Kewensis*, now in the Press, several cases have been found of names which are currently used for two or even three different genera ; thus the name *Alsine* has been employed during the period 1921-1925 for the three genera correctly known as *Minuartia* L., *Spergularia* J. & C. Presl, and *Stellaria* L. Also two genera are included under the name *Bassia*, one to which the name is correctly applied belonging to *Chenopodiaceae*, and the other to *Sapotaceae*. At the time of compilation of the original *Index*, published 1893-1895, it was not practicable in all cases to distinguish homonyms when they occurred within the same family, so that it occasionally happens that two different genera are included under the one generic heading. Such is the case with *Lagoseris*. Many of the species included in the *Index Kewensis* and Supplements I-VI. under *Lagoseris* Hoffmgg. & Link belong to *Lagoseris* Marsch.-Bieb., the generic reference to which is altogether omitted, and many to *Lagoseris* Hoffmgg. & Link, which are now reduced either to *Crepis* or *Barkhausia*. Pfeiffer had previously confused the two genera and likewise had only one series of references. A similar error has also been made in Dalla Torre & Harms, Gen. Siphonog., p. 579 (1906), where *Lagoseris* Hoffmgg. & Link is cited erroneously as a synonym of *Pterotheca*, as well as in its correct position under *Crepis*.

It is considered advisable to re-insert all the species already in the *Index Kewensis* in the current supplement under their proper generic heading. Detailed synonymy of the two genera is therefore appended.

**Lagoseris** *Marsch.-Bieb.* Cent. Pl. Rar. Taur. Cauc. t. 30 (1810) ; Fl. Taur. Cauc. iii. 538 (1819) ; Cass. in Dict. Sc. Nat. xxv. 124 (1822); Spreng. Syst. iii. 637 (1826) ; Less. Syn. 139 (1832) ; Koch, Syn. ed. 1, 435 (1837) ; Endl. Gen. 500 (1838) ; Walp. Rep. ii. 697 (1843) ; Griseb. Spicil. Fl. Rumel. ii. 276 (1844) ; Nym. Syll. 50 (1854–55) ; Boiss. Fl. Or. iii. 882 (1875) ; Nym. Consp. 460 (1878–82) ; Post & Kuntze, Lexic. Gen. Phan. 314 (1903).

Type species : *Lagoseris crepoides* Marsch.-Bieb. (*Hieracium purpureum* Willd.).

*Pterotheca* Cass. in Bull. Soc. Philom. 1816, p. 200 ; et l.c. 1821, p. 125 ; Cass. in Dict. Sc. Nat. xxv. 62 (1822), xliv. 56 (1826), xlviii. 422 (1827), lx. 568 (1830) ; DC. Prodr. vii. 179 (1838) ; Ledeb. Fl. Ross. ii. 831 (1846) ; Gren. & Godr. Fl. France, ii. 329 (1850) ; Benth. & Hook. f. Gen. Pl. ii. 516 (1873) ; O. Hoffm. in Engl. & Prantl, Nat. Pflanzenfam. iv. Abt. 5, 368 (1893) ; Koch, Syn. ed. 3, ii. 1650 (anno?) ; Fiori & Paoletti, Fl. Ital. iii, 427 (1904) ; Rouy, Fl. France, viii. 209 (1905) ; Dalla Torre & Harms, Gen. Siphonog. 579 (1906).

Type-species : *Pterotheca nemausensis* Cass. (*Crepis nemausensis* Gouan).

*Intybellia* Cass. in Bull. Soc. Philom. 1821, p. 124 ; Cass. in Dict. Sc. Nat. xxiii. 547 (1822) ; Less. Syn. 144 (1832) ; DC. Prodr. vii. 180

(1838); Ledeb. Fl. Ross. ii. 831 (1846); Brongn. Enum. Gen. Pl. ed. 2, 82 (1850).

The following is a list of names published under *Lagoseris* Marsch.-Bieb.:—*L. alata* Nym., *L. aralensis* Boiss., *L. bifida* Koch, *L. caspica* Paczosky, *L. crepoides* Marsch.-Bieb., *L. frigida* Boiss., *L. hieracioides* Boiss. & Hausskn., *L. Marschalliana* Thellung, *L. nemausensis* Marsch.-Bieb., *L. orientalis* Boiss., *L. purpurea* Stev. ex DC., *L. runcinata* Boiss., *L. Ruppelii* Sch.-Bip., *L. sancta* Maly, *L. taurica* Marsch.-Bieb.

**Lagoseris** *Hoffmgg. & Link*, Fl. Port. ii. 149 (1820); Link, Enum. ii. 289 (1822); Reichb. Ic. Bot. i. 11, 28 (1823); Link, Handb. i. 797 (1829).

Type-species: *Lagoseris intybacea* Hoffmgg. & Link (*Crepis intybacea* Brot.).

The following are the published binominals:—*L. apargioides* Link, *L. bursifolia* Link, *L. calycina* Hoffmgg. & Link, *L. cernua* Link, *L. intybacea* Hoffmgg. & Link, *L. leontodontoides* Link, *L. raphanifolia* Link, *L. taraxacifolia* Steud., *L. taraxacoides* Reichb., *L. taurinensis* Link, *L. tenuifolia* Reichb., *L. versicolor* Fisch. ex Link.

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## XI.—NEW SPECIES OF AND CRITICAL NOTES ON MESEMBRYANTHEMUM AND ALLIED GENERA.

N. E. Brown.

**Dorotheanthus** *Schwant.*

By the courtesy of Dr. Briquet I have had the privilege of examining the type of *Mesembryanthemum bellidiforme*, and find that this plant belongs to the genus *Dorotheanthus*. The specimen is a good one and in an excellent state of preservation, although collected so long ago as 22 October 1695. It is not in fruit, but the structure of the ovary, which can be well seen, is unmistakably that of the genus *Dorotheanthus* Schwant., and not of the very similar genus *Cleretum* N. E. Br. Its synonymy will therefore be as follows:

**Dorotheanthus bellidiformis** *N. E. Br.* (*Mesembryanthemum bellidiforme* Burm. *M. criniflorum* L.f. *Dorotheanthus criniflorus* Schwant. *Stigmatocarpum caducum* L. Bolus and *S. copticum* L. Bolus, but not *Mesembryanthemum caducum* Ait., nor *M. copticum* L., on which those names are founded).

**Echinus** *L. Bolus* (*Braunsia* Schwantes in Gartenwelt, 1928, 644).

In Flowering Plants of South Africa, at t. 266, this genus was established with much confusion of nomenclature upon a plant that was found to have stiff hairs or processes upon its seeds, while a closely allied species (*E. Maximiliani*) that had no such hairs upon its seeds, but otherwise identical in structure, was placed in the genus *Mesembryanthemum*. The presence or absence of these hairs upon

the seeds is of no more generic importance than their presence or absence upon leaves of different species of the same genus. For example, these stiff hairs are present also on the seeds of some species of *Glottiphyllum* and of *Anacampseros* and are absent from others of the same genera.

The name is unfortunate, as *Echinus* is also the generic name of the common European "Sea-urchin," but retaining this generic name, as there are other characters beside that of the seeds, the species will be as follows :—

**Echinus edentulus** *N. E. Br.* (*M. edentulum* Haw. *M. apiculatum* Kensit. *M. binum* N. E. Br. *Echinus apiculatus* L. Bol. *Braunsia bina* Schwantes).

**Echinus Matthewsii** *N. E. Br.* (*M. Mathewsii* L. Bol.).

**Echinus Maximiliani** *N. E. Br.* (*M. Maximiliani* Schlechter. *M. apiculatum* var. *muticum* L. Bol. *M. Phillipsii* L. Bol. *M. binum* L. Bol., not of N. E. Br. *Braunsia Maximiliani* Schwantes).

**Glottiphyllum propinquum** *N. E. Br.*, sp. nov.

*Folia* disticha, linguiformia, recta vel leviter decurva, 4–7·5 cm. longa, 15–20 mm. lata, 6 mm. crassa, supra usque ad apicem plana, dorso convexa, apice rotundata, pallide viridia. *Pedicelli* 6–10 mm. longi, cultu ad 25 mm. longi. *Calyx* 4–6-lobus, lobi 6–10 mm. longi, 6–8 mm. lati, alii carinati et acuti, alii plani et membranaceo-marginati. *Corolla* circa 5 cm. diametro ; petala 1–2-seriata, 20–25 mm. longa et 1·5 mm. lata, apice obtusa vel leviter dentata, lutea. *Stamina* 8 mm. longa, lutea. *Stigmata* 12–14, radiata, 3 mm. longa, plumosa. *Capsula* clausa 12 mm. diametro, leviter convexa, jugis 12–14 onusta.

South Africa. Mossel Bay Division : region of Great Brak River, *Mrs. D. van der Bijl* 32.

**Lithops Maughani** *N. E. Br.*, sp. nov.

*Corpuscula* 10–15 mm. longa, 10–14 mm. lata et 6–10 mm. crassa, cum fissura 2–4 mm. alta ; lobi leviter convexi, cupreo-brunnei, ochraceo-marginati et disco ochraceo-maculati, cum ordine maculorum rubro-brunneorum circa marginem dispositi. *Flores* ignoti. *Capsula* compressa, 4–6 mm. lata, valvis quinque.

Little Namaqualand. *Dr. Maughan Brown* 708.

A small and neat species, quite distinct from all others known to me.

**Mentocalyx velutina** *N. E. Br.*, comb. nov. (*M. Muirii* N. E. Br. *Mesembryanthemum velutinum* L. Bol. *Gibbaeum velutinum* Schwantes).

The specific name of this plant has to be changed, as I find that it had been previously published as *Mesembryanthemum velutinum*, but I failed to identify it with the description.

**Mesembryanthemum biforme** *N. E. Br.*, sp. nov.

*Planta* ramosa-caespitosa, vix 2·5 cm. alta, glabra. *Folia* sublibera 2–7 mm. longa, 2–3 mm. lata et 2–2·5 mm. crassa, trigona, acuta vel subacuta ; folia altera in corpusculum 2–5 mm. longum apice breviter bilobum connata, omnia griseo-viridia purpureo tincta et conspicue punctata. *Pedunculi* 3–4 mm. longi, apice bibracteati. *Bracteae* in cupulam bilobam connatae. *Flores* imperfecti, in bracteas subsessiles. *Capsula* clausa 4–5 mm. diametro.

South Africa. Swellendam Division ; near Barrydale, *Muir*.

**Mesembryanthemum brevicolle** *N. E. Br.*, sp. nov.

*Planta* ramoso-caespitosa vix pollicem alta, glabra. *Folia* sublibera 4–6 mm. longa, 1·5–2 mm. lata et crassa, supra plana, acuta, subtus acute carinata, lateribus convexa ; folia altera ad medium connata, omnia pallide glauco-viridia, obscure punctata. *Pedunculi* brevissimi, bibracteati. *Pedicelli* 2 mm. longi. *Corolla* circa 12 mm. diametro ; petala subbiseriata, circa 5 mm. longa, 0·5 mm. lata, acuta, rosea, linea saturate rosea notata. *Staminodia* et *stamina* basi alba et apice rosea vel raro omnino alba. *Stigmata* 5, subulata. *Ovarium* circa stigmata 5-tuberculatum.

South Africa. Ladismith Division ; Klein Karoo, flowering in July, *Muir* 4064.

**Mesembryanthemum condensum** *N. E. Br.*, sp. nov.

*Planta* et folia eis *M. propinqui* simillima, sed foliis 6–8 mm. longis eciliatis et floribus bibracteatis differt.

*Flores* sessiles vel pedunculis infra bracteas 2–3 mm. longis. *Corolla* circa 10 mm. diametro ; petala 4 mm. longa, acuta, rosea, linea saturate rosea notata. *Stamina* ad apicem rosea, basi albida. *Glandulae* in annulum pentagonum conjunctae. *Stigmata* 5, fere 2 mm. longa, basi tuberculis magnis cincta.

South Africa. Montagu Division ; Klein Karoo, *Muir* 4065.

**Mesembryanthemum Ivori** *N. E. Br.*, sp. nov.

*Planta* caespitosa, circa 2–2·5 cm. alta, glabra. *Folia* biformia, foliis marcidis vestita ; folia sublibera 4 mm. longa, hemispherica, quum clausa corpusculum globosum 3 mm. diametro formata ; folia altera fere ad apicem in corpusculum ellipsoideum connata, omnia viridia, punctata. *Flores* solitarii. *Pedicelli* foliis breviores, fructu 3–4 mm. longi. *Calyx* subaequaliter 6-lobus ; lobi 3 mm. longi, ovati, obtusi vel subacuti. *Corolla* specie 10–12 mm. diametro. petala uniseriata, 4–5 mm. longa, anguste linearia, obtusa, pulchre purpurea. *Stamina* 2 mm. longa, alba. *Stigmata* 6, erecta, 1 mm. longa, subulata, acuta.

South Africa. Frazerburg Division ; Karoo near Frazerburg, *Dekenah* 67, and in *Herb. Muir* 4285.

Named after the discoverer, Mr. Ivor Dekenah.

**Mesembryanthemum Dekenahi** *N. E. Br.*, sp. nov.

*Planta* 2–2·5 cm. alta, glabra. *Folia* omnia conformia, juniora clausa, 4–12 mm. longa, 1·5–3·5 mm. lata et 2·5–3·5 mm. crassa,

trigona, acuta, supra plana, dorso carinata, glauca, punctis atro-viridibus notata. *Pedicelli* 4–10 mm. longi, interdum basi bracteati. *Calycis* lobi 2·5–3 mm. longi, ovati, obtusi. *Corolla* circa 12 mm. diametro, roseo-purpurea. *Staminodia* et *stamina* circa 1·5 mm. longa, albida. *Stigmata* 5, circa 1·5 mm. longa. *Capsula* expansa 4–5 mm. diametro.

South Africa. Frazerburg Division; Frazerburg Karoo, *Dekenah* 23, and in *Herb. Muir* 4079.

This attractive little species was also discovered and sent to me by Mr. Ivor Dekenah.

**Mesembryanthemum disgregum** *N. E. Br.* This is the plant wrongly described and figured as being *M. stipulaceum* L. in Fl. Pl. of S. Africa, t. 253. It is a dwarf shrublet with decumbent stems or main branches and not glaucous, while *M. stipulaceum* is a tall, erect, shrubby species, very glaucous, and with different flowers.

**Mesembryanthemum limbatum** *N. E. Br.*, sp. nov.

*Caespitosa*, 2–3 cm. alta. *Folia* basi connata, 5–10 mm. longa, 5–7 mm. lata et 4–5 mm. crassa, trigono-ovata, dorso carinata, cinereo-viridia, marginibus et carinis brunneis, impunctata. *Pedicelli* brevissimi. *Corolla* 14–16 mm. diametro, petala linearia, obtusa vel subdentata, purpurea. *Staminodia* et *stamina* purpurascens, basi pallida, antheris albis.

South Africa. Saldanha Bay district, *Marloth*.

This charming little plant, for which I am indebted to Dr. R. Marloth, is one of a group of very dwarf tufted or mat-forming species, that look very different from the taller shrubby kinds, but I find no character in their flowers or fruit to separate them from *Mesembryanthemum*. In some species the leaves are all alike, but in others the alternating pairs are dissimilar, those of one pair being free nearly to the base and those of the next pair united for half to three-parts or more of their length into a solid body, which sometimes withers into a whitish sheath enclosing the succeeding pair. But these distinctions, I find, from the numerous species I have examined, gradually pass into one another, and by other transitions into the taller shrubby species so that they cannot be generically separated.

**Mesembryanthemum propinquum** *N. E. Br.*, sp. nov.

*Planta* vix pollicem alta. *Folia* sublibera 5–6 mm. longa, 2·5–3 mm. lata et 2 mm. crassa, supra plana, dorso rotundata et leviter carinata; folia connata dorso acute carinata, omnia marginibus carinisque minute ciliata, leviter glauco-viridia. *Flores* subsessiles vel infra bracteas pedunculo 3–4 mm. longo suffulti, quadribracteati. *Corolla* 8–10 mm. diametro; petala uniseriata, obtusa, pallide rosea, linea saturate rosea notata. *Capsula* clausa 4–5 mm. diametro.

South Africa. Montagu Division; in the Klein Karoo, *Muir* 4071.

**Mesembryanthemum roseolum** *N. E. Br.*, sp. nov.

*Folia* sublibera 6–8 mm. longa, basi 3 mm. lata et 2·5 mm. crassa, ad apicem obtusum attenuata, supra plana vel leviter convexa, subtus rotundata et leviter carinata ; folia altera medium connata, omnia glauco-viridia, pellucido-punctata. *Pedicelli* 3–4 mm. longi, basi bibracteati. *Corolla* circa 15 mm. diametro, odorata ; petala laxa, 5 mm. longa, vix 1 mm. lata, acuta, pallide rosea. *Staminodia* et *stamina* albida, apice rosea. *Glandulae* in annulum pentagonum connatae. *Stigmata* 1·5 mm. longa, subulata, luteola.

South Africa. Montagu Division ; Klein Karoo, *Muir* 4062.

**Mesembryanthemum sobrinum** *N. E. Br.*, sp. nov.

*Planta* ramosa-caespitosa vix pollicem alta, glabra. *Folia* sublibera 3–5 mm. longa, 2 mm. lata et 1·5 mm. crassa, supra plana, subtus leviter compressa et carinata, carina leviter scabra ; folia altera ultra medium connata, omnia subglauco-viridia. *Pedicelli* 2–3 mm. longi, sed in vaginam foliorum partim inclusi. *Corolla* circa 8 mm. diametro ; petala 3–4 mm. longa, acuta, roseo-purpurea, linea saturate purpurea notata. *Staminodia* et *stamina* roseo-purpurea basi alba. *Glandulae* distinctae. *Stigmata* 5, filiformia, 1·5 mm. longa.

South Africa. Riversdale Division ; Klein Karoo, *Muir* 4014.

**Psilocaulon distinctum** *N. E. Br.*, sp. nov.

*Frutex* erecta ad 45 cm. alta. *Rami* saepe oppositi, 3–4 mm. crassi, internodiis 5–20 mm. longis et papulis compressis prominentibus dense obtecti. *Folia* 5–10 mm. longa, 1–1·5 mm. crassa, incurvato-erecta, semiteretia, obtusa, supra canaliculata, minute papulosa. *Flores* ad apicem ramorum subcymosi. *Pedicelli* 2–3 mm. longi. *Calyx* minute papulosus, inaequaliter 4-lobus ; lobi 5–6 mm. longi, duobus interioribus membranaceo-marginatus. *Corolla* 10–12 mm. diametro, alba.

Great Namaqualand. Keiap Ravine, Great Karasberg, *Pearson* 8591.

**Psilocaulon implexum** *N. E. Br.*, sp. nov.

*Rami* prostrati ad 2 mm. crassi, implexi, junioribus glaucis. *Folia* incurvato-adscendentia, 6–10 mm. longa, 1·5 mm. crassa, subteretia, acuta, basi angustata, supra canaliculata, pellucido-punctata, glauca. *Flores* in ramulos brevissimos laterales secus rami dispositi. *Pedicelli* circa 2 mm. longi, erecti. *Calyx* inaequaliter 4-lobus, glaucus. *Petala* 4 mm. longa, 0·5 mm. lata, linearia, acuta, alba. *Stigmata* 4, erecta, 2 mm. longa, pallide luteola.

South Africa. Riversdale Division ; by the Kafirkuils River. *Muir* 4234.

This is allied to *P. parviflorum* L. Bol., but is readily distinguished by its much more slender stems and shorter pedicels, which much less abruptly pass into the calyx.

**Erepsia Marlothii** *N. E. Br.*, sp. nov.

*Caules* plures e radice, erecti, graciles, 15–22 cm. alti et ad 1 mm. crassi, internodiis 1–5 cm. longis, glabri, ochracei, punctis linearibus brunneis crebre notati. *Folia* suberecta, 5–10 mm. longa, 1 mm. crassa, lineari-trigona, acuta, punctata. *Flores* ad caulem 1–3, subsessiles vel pedicellis ad 2 mm. longis, quisque bibracteati vel quadribracteati. *Bracteae* 4 mm. longae, late ovatae, acutae. *Corolla* specie 2–2·5 cm. diametro; petala subuniseriata, laxa, circa 10 mm. longa et 0·75 mm. lata, linearia, obtusa, specie rosea vel roseo-purpurea. *Staminodia* 1·5–3 mm. longa, apice recurva, specie aurantiaca apice atro-purpurea. *Stamina* alba. *Stigmata* minuta, virescens.

South Africa. Clanwilliam Division; Cedarberg Range, 1000 ft. alt., *Primos* in *Herb. Marloth* 13537.

**Roodia brevipes** *L. Bol.* (*R. digitifolia* N. E. Br. *Mesembryanthemum brevipes* Schlecht.). I have now been able to examine the type of *M. brevipes*, Schlechter no. 8147, from hills on Knechts Vlagte near Zout River, and find that Mrs. Bolus is quite right in stating that this plant is a *Roodia*. But Schlechter's description of it is erroneous, so that it would be impossible to identify the plant without seeing the type. The statements that there are 4–6 leaves to a growth and that the flowers have 6 subulate stigmas are wrong, the leaves and structure being as described by myself for *Roodia*. The subulate stigmas are imaginary, for there is only the one circular sessile stigma in the type, which has no visible peduncle, the bracts being only just exserted from between the leaves, and the pedicel is only 10–12 mm. long. But from photographs of this plant that I have now seen, I find the length of the peduncle and pedicel to be a very variable character, and am now satisfied that *M. brevipes* Schlecht. and *Roodia digitifolia* are one species.

**Vanzijlia** *L. Bol.*

This genus was published in South African Flowering Plants vii. t. 262, where great confusion has been caused by the misidentification of one of the species. At the place quoted, Mrs. Bolus states "I have been able to dissect a flower of the type of *M. annulatum* Berger, and to satisfy myself that *M. angustipetalum* L. Bolus is identical with it." Mrs. Bolus, according to a note on the type sheet, has I believe only had a flower or a very small scrap of *M. annulatum* for examination. I have seen and examined the complete specimen, and find it to be a remarkable plant and different from that which Mrs. Bolus has identified with it. I therefore give here a more complete description of it than has yet been published, together with the synonymy of the two species.

Upper pairs of leaves united for about one-quarter to one-third of their length, acute; petals 18–20 mm. long.....1. *angustipetala.*

Upper pair of leaves united for half or more than half of their length, obtuse or rounded at the apex; petals apparently not more than 12 mm. long.....2. *annulata.*

1. **Vanzijlia angustipetala** *N. E. Br.*, comb. nov. (*Mesembryanthemum angustipetalum* L. Bol. in Ann. Bol. Herb. iii. 166. *Vanzijlia annulata* L. Bol. in Fl. Pl. of S. Afr. vii. t. 262, not *Mesembryanthemum annulatum* Berger).

2. **Vanzijlia annulata** *N. E. Br.*, comb. nov.

*Glabrous. Main stems* about 15 cm. high, with internodes 4–32 mm. long and about 2 mm. thick, dark grey; lateral branches suberect or upcurved, 8–25 mm. long, each terminating in two dissimilar pairs of leaves and the naked part marked with prominent rings at the closely placed nodes. *Leaves* opposite, 1–2 pairs to each growth, united for the greater part of their length and the pairs dissimilar; the first pair small and, when closed together, forming an ellipsoid or globose body 6–10 mm. long and 6–8 mm. in diameter, afterwards becoming spreading, bearing on their tips a very peculiar rosette or circle of small and apparently hardened excrescences on (or folds of) the epidermis, somewhat suggestive of a structure similar to that of the tuft of bristles at the tips of the leaves of *M. barbatum*, but in this plant they are but mere ridges slightly raised above the surface. From between the first pair arises a second larger and differently shaped pair, 6–16 mm. long at the exserted part, somewhat resembling growths of *Conophytum turrigerum* in form, being united for half or more of their length, with the free parts 5–8 mm. long and 4–5 mm. thick, rounded on the back and obtuse at the apex, and quite destitute of the peculiar rosette present on the tips of the first pair; epidermis smooth, not coarsely papillate as originally described, but of course much wrinkled in the dried state. *Flower* solitary, terminal. *Pedicel* exserted 2–4 mm. from the united part of the leaves, bractless (in the original description the second pair of leaves are mistakenly called bracts). *Calyx* unequally 5-lobed nearly down to its union with the ovary (not 4-lobed, as described); lobes 4–7 mm. long, obtuse or subacute, three of them with membranous margins. *Petals* in 1-2 series, apparently about 10–12 mm. long and less than 1 mm. broad, narrowly linear. *Staminodes* many, about 3–4 mm. long, filiform, acute. *Stamens* 4–5 mm. long. *Stigmas* 10, about 3 mm. long, erect, subulate, united at the base into a very short stout style. *Capsule* unknown.—*Mesembryanthemum annulatum* Berger in Engler, Bot. Jahrb. lvii, 627.

South Africa. Van Rhynsdorp Division; in sandy places on the Karee Bergen, 1500 ft. alt., *Schlechter* 8280.

The above description is made from the type plant, and the measurements given are those of the dried specimen and may be exceeded when the plant is alive. The original description is inaccurate.

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## XII.—MISCELLANEOUS NOTES.

John Redman Bovell, I.S.O., F.C.S., F.L.S., whose death occurred at Barbados on November 22nd, 1928, at the age of 73, began his official agricultural career in 1886 as Superintendent of the Botanic Station at Dodd's Reformatory in Barbados, where he had been in charge of the Reformatory and Industrial School since 1883. Here, in conjunction with Prof. Harrison, and later with Prof. D'Albuquerque, he undertook and carried out a very valuable series of cultural experiments to determine the best varieties of canes suitable for Barbados.

On the formation of the Imperial Department of Agriculture with headquarters in Barbados, in 1898, he was seconded from his post of Superintendent of the Reformatory to take charge of the Experiment Station for the improvement of the sugar cane. He was appointed Superintendent of Agriculture in Barbados in 1908, and in the same year was honoured with the I.S.O. He retired in 1925.

Bovell will be best remembered by his prominent association with the discovery of seedling sugar canes. The subject is discussed in the *Kew Bulletin*, 1888—" Seedlings of Sugar Cane at Barbados " (pp. 294-296), and 1891—" Production of seed and seminal variation in the Sugar Cane " (pp. 10-24) : whilst in " Nature," February 9th, 1911, the late Sir William Thiselton-Dyer, in a paper on " What Science has done for the West Indies," records that " about 1888, Mr. Bovell and Professor Harrison noticed the spontaneous occurrence of seedling sugar-canes in Barbados. It was found that the sugar-cane did actually produce seed, though in so small a quantity that it had been overlooked. As this at once opened the door to seminal variation and selection the attention of the Colonial Office was at once directed by Kew to the importance of the discovery. The work was vigorously taken up by Sir Daniel Morris and from 1898 onwards seedlings have been raised on a large scale by Mr. Bovell and continuously selected from as well as hybridised." The influence for good of this early work with seedling canes has not been limited to Barbados but has since been felt over the whole of the sugar world. J. H. H.

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**" A Sower."**—This important work by the late Sir Hamo Thornycroft, R.A., has been most generously presented to the Ministry of Agriculture and Fisheries by the President and Council of the Royal Academy, to be placed in the Royal Botanic Gardens, Kew. The statue has been erected at the northern end of the Broad Walk, on a pedestal designed by Sir Edward Lutyens, R.A., and Mr. A. Drury, R.A. It is hoped that a photograph of the statue will appear in a later number of the Kew Bulletin.

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**The Otari Open Air Museum, Wellington, New Zealand.**—In the *Kew Bulletin*, 1926, p. 428, under the title " A Nature Reserve in Wellington," a brief account was given of the project for the

setting apart of Wilton's Bush, now known as the Otari Open Air Museum, as a reserve for the native vegetation of New Zealand.

On January 25th, 1928, I was present at the formal inauguration of this fine area by the Mayor of Wellington, and had the opportunity of visiting the whole of the reserved area, which is very richly furnished with an almost untouched collection of native plants. As many characteristic New Zealand trees, shrubs and herbaceous plants are not to be found in the old Bush, Dr. Cockayne, to whose keenness and enterprise the initiation of this important scheme is due, has arranged for the planting of as representative a collection of New Zealand plants in this remarkable open air Museum as may be likely to flourish there.

As Alpine plants were hardly represented in the Bush, Dr. Cockayne has selected an area suitable for the construction of an Alpine Garden, and in a recent letter he informs me that the planting of the Alpine Garden has been commenced. Among the plants Dr. Cockayne mentions that there are "at least 100 *Celmisia* hybrids, *Stilbocarpa polaris*, about 12 fine young *Ranunculus insignis*, various hybrid Hebes and Olearias, *Gunnera Hamiltonii*, some Gaultherias, *Phyllachne Colensoi* and *Donata novae-zelandiae*. Much of the soil is a fine open loam. There is abundance of good-sized rocks and any amount of broken rocks for a top-dressing. I think more than 500 plants, representing about 200 species and varieties, are in their places."

"Other work is also in progress. The ground for the systematic collection has been ploughed and we are putting hedges, each about 30 ft. long, round it of various indigenous plants, *e.g.*, *Dodonaea viscosa*, *Metrosideros tomentosa*, various species of *Hoheria*, species of *Coprosma*, etc. At the upper entrance, near the gardener's house, there will be planted a grove of *Edwardsia microphylla*, *Hoheria populnea*, *H. sexstylosa* and *Clianthus puniceus*. In the valley there is being planted a large bed with all the variegated and bronze-leaved trees and shrubs plus the double and single crimson, pink and white forms of *Leptospermum scoparium* and, in another place, 100 shrubs of *L. scoparium* var. *Nichollsii* to form a close mass."

"Then 2½ acres have been ploughed ready for the artificial Kauri forest and the allied forest associations."

"Finally, many plants of *Clematis indivisa* are to be planted so as to climb over the 'natural pergola' through which the main path passes from the lower entrance and the Alpine garden."

This very interesting Open Air Museum should prove of the greatest interest to all lovers of the remarkable New Zealand vegetation resident in the Dominion and also be of the utmost value to all visitors to New Zealand who wish to study the native plants of the Islands.

A. W. H.

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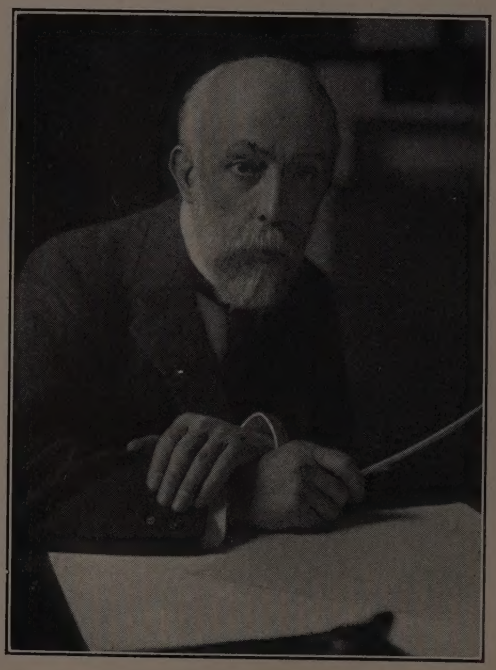
(548) Wt. 85/18 1M 3/29 S.E.R. Ltd. Gp. 9.

PLATE III



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SIR WILLIAM TURNER THISELTON-DYER,
K.C.M.G., C.I.E., 1843–1928.